



THE PRESIDENT'S
RECOVERY
PRIORITIES

Education

Ministry of
Education,
Science and
Technology

Lesson plans for
PRIMARY
Mathematics

2
CLASS

3
TERM

Foreword

Our country's future lies in the education of our children. The Government of Sierra Leone is committed to doing whatever it takes to secure this future.

As Minister of Education, Science and Technology since 2007, I have worked every day to improve our country's education. We have faced challenges, not least the Ebola epidemic which as we all know hit our sector hard. The Government's response to this crisis – led by our President – showed first-hand how we acted decisively in the face of those challenges, to make things better than they were in the first place.

One great success in our response was the publication of the Accelerated Teaching Syllabi in August 2015. This gave teachers the tools they needed to make up for lost time whilst ensuring pupils received an adequate level of knowledge across each part of the curriculum. The Accelerated Teaching syllabi also provided the pedagogical resource and impetus for the successful national radio and TV teaching programs during the Ebola epidemic.

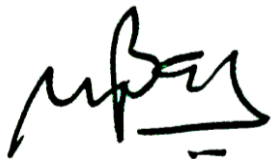
It is now time to build on this success. I am pleased to issue new lesson plans across all primary and JSS school grades in Language Arts and Mathematics. These plans give teachers the support they need to cover each element of the national curriculum. In total, we are producing 2,700 lesson plans – one for each lesson, in each term, in each year for each class. This is a remarkable achievement in a matter of months.

These plans have been written by experienced Sierra Leonean educators together with international experts. They have been reviewed by officials of my Ministry to ensure they meet the specific needs of the Sierra Leonean population. They provide step-by-step guidance for each learning outcome, using a range of recognised techniques to deliver the best teaching.

I call on all teachers and heads of schools across the country to make best use of these materials. We are supporting our teachers through a detailed training programme designed specifically for these new plans. It is really important that these Lesson Plans are used, together with any other materials you may have.

This is just the start of education transformation in Sierra Leone. I am committed to continue to strive for the changes that will make our country stronger.

I want to thank our partners for their continued support. Finally, I also want to thank you – the teachers of our country – for your hard work in securing our future.



Dr. Minkailu Bah

Minister of Education, Science and Technology











Table of Contents

Lesson 121: Identifying halves using pictures	2
Lesson 122: Making stories by drawing halves in pictures	4
Lesson 123: Identifying quarters using pictures	6
Lesson 124: Making stories by drawing quarters in pictures	8
Lesson 125: Locating halves and quarters on a number line	10
Lesson 126: Identifying unit fractions with denominators 2, 4 and 8 using pictorial representation	12
Lesson 127: Identifying unit fractions with denominators 3, 6 and 9 using pictorial representation	14
Lesson 128: Identifying unit fractions with denominators 5 and 10 using pictorial representation	16
Lesson 129: Identifying unit fractions with denominators from 2 to 10 using pictorial representation	18
Lesson 130: Identifying non-unit fractions for denominators from 2 to 10 using pictorial representation	20
Lesson 131: Multiplication by 5 using counters	22
Lesson 132: Multiply by 5 using a number line	24
Lesson 133: Multiplication table of 5	26
Lesson 134: Mental strategies for multiplication by 5	28
Lesson 135: Word problems involving times 5 using pictures	30
Lesson 136: Patterns in pictures involving multiplication	32
Lesson 137: Patterns that involve multiplication using sound	34
Lesson 138: Drawing patterns for number sequences that involve multiplication	36
Lesson 139: Finding and describing patterns out of the classroom that involve multiplication	38
Lesson 140: Finding and describing patterns out of the classroom that involve multiplication	40
Lesson 141: Estimation and measurement of volume using non-standard units of measurement	42
Lesson 142: Estimation and measurement of capacity using non-standard units of measurement	44

Lesson 143: Comparing and ordering capacity using non-standard units	46
Lesson 144: Comparing and ordering volume using non-standard units	48
Lesson 145: Word problems involving volume and capacity using non-standard units	50
Lesson 146: Drawing 12 hours on the clock face	52
Lesson 147: Telling the time in hours and half hours	54
Lesson 148: Telling the time in quarters of an hour	56
Lesson 149: Telling the time to 5 minutes	58
Lesson 150: Seconds in a minute	60

Introduction to the Lesson Plan Manual

These lesson plans are based on the National Curriculum and meet the requirements established by the Ministry of Education, Science and Technology.

- 1  The lesson plans will not take the whole term, so use spare time to review material or prepare for exams
- 2  Teachers can use other textbooks alongside or instead of these lesson plans.
- 3  Read the lesson plan before you start the lesson. Look ahead to the next lesson, and see if you need to tell pupils to bring materials for next time.
- 4  Make sure you understand the learning outcomes, and have teaching aids and other preparation ready – each lesson plan shows these using the symbols on the right.
- 5  Quickly review what you taught last time before starting each lesson.
- 6  Follow the suggested time allocations for each part of the lesson. If time permits, extend practice with additional work.
- 7  Lesson plans have a mix of activities for the whole class and for individuals or in pairs.
- 8  Use the board and other visual aids as you teach.
- 9  Interact with all students in the class – including the quiet ones.
- 10  Congratulate pupils when they get questions right! Offer solutions when they don't, and thank them for trying.



Learning outcomes






Teaching aids



Preparation

Lesson Title: Identifying halves using pictures	Theme: Everyday Arithmetic – Fractions	
Lesson Number: M-02-121	Class/Level: Class 2	Time: 35 minutes

	Learning Outcomes By the end of the lesson, pupils will be able to identify halves of quantities using pictures.		Teaching Aids One piece of fruit, cut in 2 equal parts.		Preparation Cut 1 piece of fruit in 2 equal parts.
---	--	---	---	---	--

Opening (4 minutes)

1. Hold up the piece of fruit together as 1 piece.
2. **Say:** This is a _____. It is a whole _____. If I want to share it equally with someone then I will cut it in half.
3. Separate the piece of fruit in half.
4. **Say:** I have divided the _____ in 2 equal parts. These parts are called halves. One half and 1 more half equal 2 halves, or 1 whole.

Introduction to the New Material (6 minutes)

1. **Say:** Today we will learn how to identify halves.
2. **Say:** When you divide an item or a number into 2 equal parts, those parts are called halves.



3. Draw:
4. **Say:** Here are 6 bananas.
5. **Say:** If I divide them into 2 equal parts, each part would have 3 bananas.



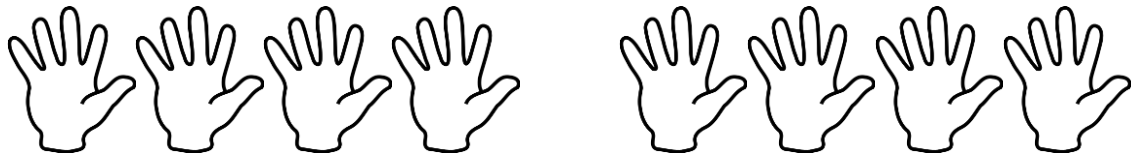
6. Draw:
7. **Say:** Three bananas is half of 6 bananas.
8. **Say:** A half is when you take the total and divide it into 2 equal parts.

Guided Practice (8 minutes)

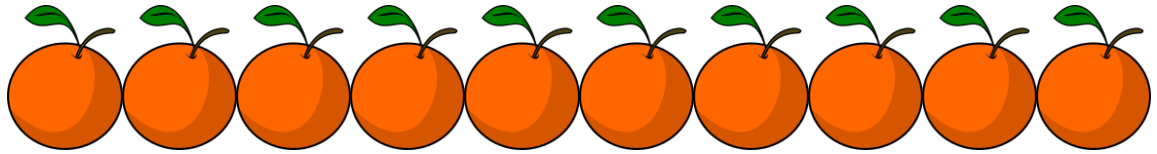
1. **Say:** Let's try it together.
2. Draw:



- Ask:** How many hands are there in total? (Answer: 8)
- Ask:** If I divide the hands into 2 equal parts, how many will be in each part? (Answer: 4)



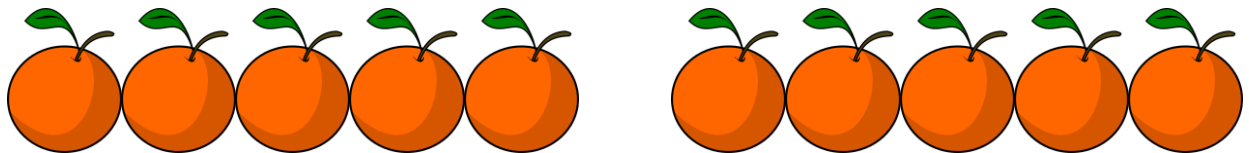
5. Draw:



6. Draw:

- Ask:** How many oranges are there in total? (Answer: 10)
- Ask:** How do I figure out 1 half of 10? (Answer: Divide into 2 equal parts.)

9. Draw:



- Ask:** If I divide the oranges into 2 equal parts, how many will be in each part? (Answer: 5)

Independent Practice (15 minutes)

- Check pupils have an exercise book and a pencil. If they don't, tell pupils to work together with somebody who has. Or give a piece of chalk to some pupils and they can work at the board or a slate.
- Draw the following on the board:

4 butterflies	6 shoes
8 children	10 hippos
- Say:** Draw the pictures on your paper as I have done on the board. For each picture, write down how many item in 1 half of each group of pictures.
- Give pupils 10 minutes to draw.
- Ask 4 volunteers (2 boys and 2 girls) to tell the class how many items in 1 half of each group of pictures (Answers: 2 butterflies, 3 shoes, 4 children, 5 hippos)
- Ask pupils to hold up their work for you to see.

Closing (2 minutes)

- Say:** Today we learned how to identify halves of quantities using pictures. In the next lesson we will make stories by drawing halves of pictures.
- Say:** Well done. Thank you class. Pupils say: Thank you.

Lesson Title: Making stories by drawing halves in pictures	Theme: Everyday Arithmetic – Fractions	
Lesson Number: M-02-122	Class/Level: Class 2	Time: 35 minutes

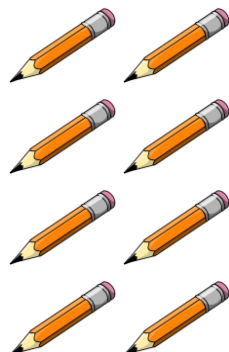
 Learning Outcomes By the end of the lesson, pupils will be able to draw halves of quantities.	 Teaching Aids None	 Preparation None
---	--	--

Opening (2 minutes)

1. **Say:** In the previous lesson we learned how to identify halves using pictures. Today we will be drawing halves of quantities.

Introduction to the New Material (6 minutes)

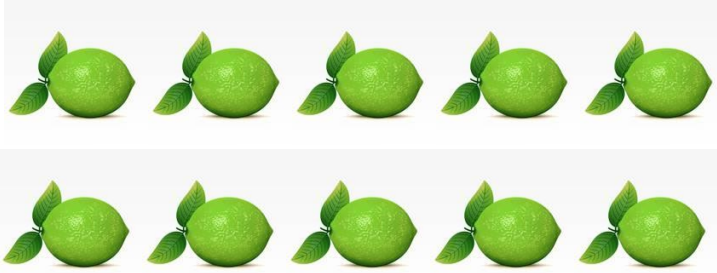
1. **Say:** I went to the store and bought 8 pencils. If I have 2 children, I would like to give them each the same amount of pencils.
2. **Say:** That means I will need to divide the 8 pencils into 2 groups, or halves, so they each child receives the same amount of pencils.
3. **Say:** So I will draw the 8 pencils and put them into 2 equal groups as I am drawing them.
4. Draw the pencils and divide into 2 groups. Count as you draw each pencil. Stop when you get to 8.



7. **Say:** I have drawn the 8 pencils and put them in 2 equal groups. Each group, or half, has 4 pencils. One half of 8 is 4. Each child would get 4 pencils.

Guided Practice (6 minutes)

1. **Say:** Let's try one together.
2. **Say:** I went to the market to purchase fruit for my 2 children. I purchased 10 limes. I want to know how many limes each child will get.
3. **Ask:** How do I solve the problem? (Answer: Draw the limes and divide them into 2 equal groups.)
4. Draw:



5. **Say:** 10 limes divided into halves equals 5 limes per half.

Independent Practice (20 minutes)

1. Check pupils have an exercise book and a pencil. If they don't, tell pupils to work together with somebody who has. Or give a piece of chalk to some pupils and they can work at the board or a slate.
2. Write the following on the board:




6 mangoes	8 butterflies
12 limes	10 snakes
4 shoes	2 children

3. **Say:** Work together with a partner to create a short story for each group of items.
4. **Say:** Draw the items, placing them into two equal groups or halves. Write the number of items in each half.
5. Give pupils 15 minutes to draw and solve the problems.
6. **Ask:** What is half of each of these groups of items? Have 6 volunteers (3 boys and 3 girls) share their answers. (Answer: 3 mangoes, 4 butterflies, 6 limes, 5 snakes, 2 shoes, 1 child)

Closing (1 minute)

1. **Say:** Today we created stories and drew pictures to show halves. In the next lesson we will begin learning about quarters.
2. **Say:** Well done. Thank you class. Pupils say: Thank you.

Lesson Title: Identifying quarters using pictures	Theme: Everyday Arithmetic – Fractions	
Lesson Number: M-02-123	Class/Level: Class 2	Time: 35 minutes

	Learning Outcomes By the end of the lesson, pupils will be able to identify quarters of quantities using pictures.		Teaching Aids One piece of fruit, cut in 4 equal parts.		Preparation Cut 1 piece of fruit in 4 equal parts.
---	--	---	---	---	--

Opening (4 minutes)

1. Hold up the piece of fruit together as 1 piece.
2. **Say:** This is a _____. It is a whole _____. If I want 4 people to share it equally then I must cut it into 4 parts.
3. Separate the piece of fruit in quarters.
4. **Say:** I have divided the _____ in 4 equal parts. These parts are called quarters.

Introduction to the New Material (6 minutes)

1. **Say:** Today we will learn how to identify quarters. The names for quarters are: one quarter, two quarters, three quarters and four quarters. Four quarters equal one whole.
2. **Say:** When you divide an item or a number into 4 equal parts, those parts are called quarters.



4. **Say:** Here are 8 bananas.

5. **Say:** If I divide them into 4 equal parts, each part would have 2 bananas.



7. **Say:** 2 bananas is one quarter of 8 bananas.

8. **Say:** A quarter is when you take the total and divide it into 4 equal parts.

9. **Say:** 6 bananas is 3 quarters of 8 bananas.

Guided Practice (8 minutes)

1. **Say:** Let's try it together.

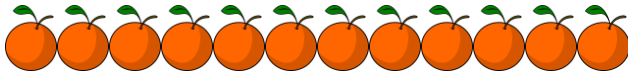
2. Draw:



3. **Ask:** How many hands are there in total? (Answer: 4)
4. **Ask:** If I divide the hands into 4 equal parts, how many will be in each part? (Answer: 1)



5. Draw:
6. **Say:** One quarter of 4 is 1.
7. **Say:** 3 quarters of 4 is 3.
8. Draw:



9. **Ask:** How many oranges are there in total? (Answer: 12)
10. **Ask:** How do I work out one quarter of 12? (Answer: Divide into 4 equal parts.)
11. Draw:



12. **Ask:** If I divide the oranges into 4 equal parts, how many will be in each part? (Answer: 3)
13. **Say:** One quarter of 12 is 3.
14. **Ask:** How many oranges is $\frac{3}{4}$? (Answer: 9)

Independent Practice (15 minutes)

1. Check that pupils have an exercise book and a pencil. If they don't, tell them to work together with someone who does. Or give a piece of chalk to some pupils and they can work at the board or a slate.
2. Draw the following on the board:




4 butterflies	12 shoes
8 children	16 snakes

3. **Say:** Draw the pictures on your paper as I have done on the board. Write down the total items in one quarter and three quarters of each group of pictures.
4. Give the pupils 12 minutes to draw, then ask 4 volunteers (2 girls and 2 boys) to share their answers with the class. (Answers: $\frac{1}{4}$ of 4 is 1, $\frac{3}{4}$ of 4 is 3
 $\frac{1}{4}$ of 12 is 3, $\frac{3}{4}$ of 12 is 9
 $\frac{1}{4}$ of 8 is 2, $\frac{3}{4}$ of 8 is 6
 $\frac{1}{4}$ of 16 is 4, $\frac{3}{4}$ of 16 is 12)

Closing (2 minutes)

1. **Say:** Today we learned how to identify quarters of quantities using pictures. In the next lesson, we will make stories by drawing quarters of pictures.
2. **Say:** Well done. Thank you class. Pupils say: Thank you.

Lesson Title: Making stories by drawing quarters in pictures	Theme: Everyday Arithmetic – Fractions	
Lesson Number: M-02-124	Class/Level: Class 2	Time: 35 minutes

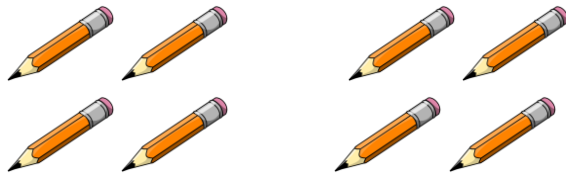
 Learning Outcomes By the end of the lesson, pupils will be able to draw halves of quantities.	 Teaching Aids None	 Preparation None
---	--	--

Opening (2 minutes)

1. **Say:** In the previous lesson we learned how to identify quarters using pictures. Today we will be drawing quarters of quantities.

Introduction to the New Material (6 minutes)

1. **Say:** I went to the store and bought 8 pencils. If I have 4 children, I would like to give them each the same amount of pencils.
2. **Say:** That means I will need to divide the 8 pencils into 4 groups, or quarters, so they each receive the same amount.
3. **Say:** So I will draw the 8 pencils and then put them into 4 equal groups as I am drawing them.
4. Draw the pencils and divide into 4 groups. Count as you draw each pencil. Stop when you get to 8.



5. **Say:** I have drawn the 8 pencils and put them in 4 equal groups. Each group, or quarter, has 2 pencils. One quarter of 8 is 2. Each child would get 2 pencils.

Guided Practice (6 minutes)

1. **Say:** Let's try one together.
2. **Say:** I went to the market to purchase fruit for my 4 children. I purchased 16 limes. I want to figure out how many limes each child will get.
3. **Ask:** How do I solve the problem? (Answer: Draw the limes and divide them into 4 equal groups.)

4. Draw:



5. **Say:** 16 limes divided into 4 quarters equals 4 limes.




Independent Practice (20 minutes)

1. Check pupils have an exercise book and a pencil. If they don't, tell pupils to work together with somebody who has. Or give a piece of chalk to some pupils and they can work at the board or a slate.
2. Write the following on the board:
4 mangoes 8 butterflies
12 limes 20 snakes
3. **Say:** Work together with a partner to create a short story that involves quarters for each group of items.
4. **Say:** Draw the items, placing them into 4 equal groups, or quarters. Write the number of items in each quarter and three quarters.
5. Give pairs 15 minutes to write and draw.
6. Ask four pairs to volunteer to share one of their short stories with the class. Have the class solve the problems. (Answers: $\frac{1}{4}$ of 4 is 1, $\frac{3}{4}$ of 4 is 3
 $\frac{1}{4}$ of 8 is 2, $\frac{3}{4}$ of 8 is 6
 $\frac{1}{4}$ of 12 is 3, $\frac{3}{4}$ of 12 is 9
 $\frac{1}{4}$ of 20 is 5, $\frac{3}{4}$ of 20 is 15)

Closing (1 minute)

1. **Say:** Today we created stories and drew pictures to show quarters. In the next lesson we will learn how to locate halves and quarters on the number line.
2. **Say:** Well done. Thank you class. Pupils say: Thank you.

Lesson Title: Locating halves and quarters on a number line	Theme: Everyday Arithmetic – Fractions	
Lesson Number: M-02-125	Class/Level: Class 2	Time: 35 minutes

	Learning Outcomes By the end of the lesson, pupils will be able to locate halves and quarters on a number line.		Teaching Aids 1-12 number line (at the end of the lesson).		Preparation Draw a number line on the board.
---	---	---	--	---	--

Opening (2 minutes)

1. We have been working on identifying and drawing halves and quarters in the past few lessons. Today we will be using the number line to locate halves and quarters.

Introduction to the New Material (8 minutes)

1. Point to the number line on the board.
2. Point to the longest lines. **Say:** These lines show you where whole numbers are on the number line.
3. Point to the lines of medium length.
4. **Say:** These lines show you where halves are located. There is one half located halfway between each whole number.
5. Point to the shortest lines.
6. **Say:** These lines show you where the quarters are located. This line's name is $\frac{1}{4}$ and this line's name is $\frac{3}{4}$. The half line actually has 2 jobs; it is also a quarter line. Its name is $\frac{2}{4}$.
7. **Say:** Let's say the parts together.
8. **Say:** Repeat after me. One quarter.
9. **Say:** One half or two quarters.
10. **Say:** Three quarters.
11. **Say:** A whole.
12. Point to $4\frac{1}{2}$ on the number line.
13. **Say:** This is 4 and $\frac{1}{2}$. I know it is $4\frac{1}{2}$ because it is halfway between the 4 and the 5 and is marked with a medium-sized line.
14. Point to $8\frac{3}{4}$ on the number line.
15. **Say:** This is 8 and $\frac{3}{4}$. I know it is $8\frac{3}{4}$ because it's the short line right after the 8.
16. Point to $9\frac{3}{4}$.
17. **Say:** I know that this is 9 and $\frac{3}{4}$ because when I start at 9 and count up I count $9\frac{1}{4}$, $9\frac{2}{4}$, and $9\frac{3}{4}$.

Guided Practice (8 minutes)

1. Check pupils have an exercise book and a pencil. If they don't, tell pupils to work together with somebody who has. Or give a piece of chalk to some pupils and they can work at the board or a slate.
2. **Say:** Please begin by drawing the number line with halves and quarters on your paper.

3. **Say:** Place a dot on the line at $5\frac{1}{2}$.
4. **Ask:** Who would like to show me on the board where $5\frac{1}{2}$ is?
5. **Say:** $5\frac{1}{2}$ is halfway between 5 and 6.
6. **Say:** Place a dot on $7\frac{1}{4}$.
7. **Ask:** Who would like to show me on the board where $7\frac{1}{4}$ is?
8. **Say:** $7\frac{1}{4}$ is the very next line after 7.
9. **Say:** Place a dot on $3\frac{3}{4}$.
10. **Ask:** Who would like to show me on the board where $3\frac{3}{4}$ is?
11. **Say:** We find $3\frac{3}{4}$ but starting at 3 and counting up. 3, $3\frac{1}{4}$, $3\frac{1}{2}$, $3\frac{3}{4}$.

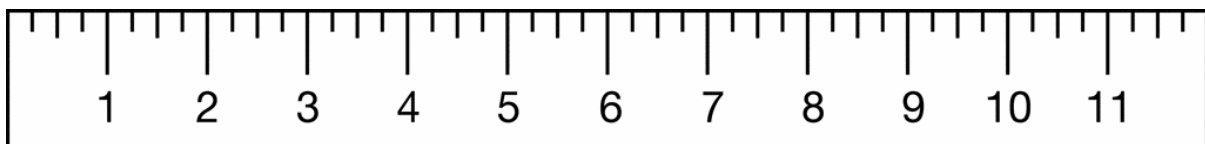
Independent Practice (15 minutes)

1. **Say:** Now it is your turn to locate numbers on the number line you have created.
2. Write: 1 $1\frac{1}{2}$ $4\frac{3}{4}$ $5\frac{1}{2}$ $2\frac{1}{4}$ $3\frac{3}{4}$ $6\frac{1}{2}$ $7\frac{1}{4}$ $8\frac{3}{4}$ $9\frac{1}{2}$ 10
3. **Say:** Once you have located all the numbers on the number line, check your work with another pupil.




Closing (2 minutes)

1. **Say:** Today we learned how to locate halves and quarters on the number line. In the next lesson we will be learning more about fractions.
2. **Say:** Well done. Thank you class. Pupils say: Thank you.

[1-12 NUMBER LINE]



Lesson Title: Identifying unit fractions with denominators 2, 4 and 8 using pictorial representation	Theme: Everyday Arithmetic – Fractions	
Lesson Number: M-02-126	Class/Level: Class 2	Time: 35 minutes

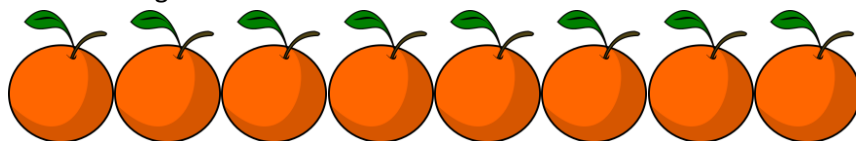
	<p>Learning Outcomes By the end of the lesson, pupils will be able to:</p> <ol style="list-style-type: none"> 1. Identify unit fractions with denominators 2, 4 and 8 using pictorial representation. 2. Write and read fractions using mathematical notation. 		<p>Teaching Aids None</p>		<p>Preparation None</p>
---	---	---	--------------------------------------	---	------------------------------------

Opening (2 minutes)

1. In the previous lessons we learned how to identify and draw halves and quarters and located them on a number line.
2. Today we are going to go a step further and learn about them as fractions.

Introduction to the New Material (10 minutes)

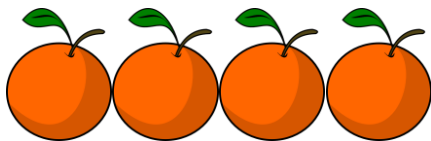
1. Write: $\frac{1}{2}$, $\frac{1}{4}$ and $\frac{1}{8}$ on the board.
2. **Say:** Two of these you have seen before, $\frac{1}{2}$, which is one half, and $\frac{1}{4}$, which is a quarter, or one fourth.
3. **Say:** The last one is new to you and is $\frac{1}{8}$, one eighth.
4. **Say:** When we look at the first one, $\frac{1}{2}$, we know that we are referring to half of a whole.
5. Draw a circle on the board and divide it in half. Shade in half the circle.
6. **Say:** Here is one half of a circle.
7. Draw a circle on the board and divide it in into 4 parts. Shade in one of the four parts.
8. **Say:** Here is one fourth or one quarter of a circle.
9. Draw a circle on the board and divide it in into 8 parts. Shade in one of the eight parts.
10. **Say:** Here is one eighth of a circle.
11. **Say:** The number on the bottom tells you how many total parts. It is called the denominator.
12. **Say:** The number on the top tells you how many of the total parts you are talking about. It is called the numerator.
13. Write: $\frac{1}{8}$.
14. **Say:** This fraction is one eighth. I know from the number on the bottom there are 8 total parts. I know from the number on the top that this fraction is talking about 1 of the 8 total parts.
15. Draw 8 oranges.



16. Circle 1 of the eight oranges.
17. **Say:** I have circled $\frac{1}{8}$ of the oranges. 1 out of 8 oranges.

Guided Practice (10 minutes)

1. Draw 4 oranges on the board.



2. **Say:** Please draw 4 oranges on your paper.
3. Write: $\frac{1}{4}$
4. **Say:** What is this number? (Answer: one fourth or one quarter)
5. **Ask:** How many total oranges are in this fraction? (Answer: 4)
6. **Say:** Remember the total amount is on the bottom. It is the denominator.
7. **Ask:** How many should we circle to represent $\frac{1}{4}$? (Answer: 1)
8. Circle 1 orange.
9. Draw 2 bananas on the board.
10. **Say:** Please draw 2 bananas on your paper.
11. **Ask:** How do I write one half? (Answer: $\frac{1}{2}$)
12. **Say:** Please circle $\frac{1}{2}$ of the bananas.
13. **Ask:** How many did you circle? (Answer: 1)
14. Circle 1 banana.
15. **Ask:** In the number $\frac{1}{4}$, which number is the denominator? (Answer: 4)




Independent Practice (11 minutes)

1. Write on the board:
 $\frac{1}{2}$ mangoes $\frac{1}{4}$ children $\frac{1}{2}$ butterflies $\frac{1}{8}$ houses
2. **Say:** Draw the total number of items in the fraction, the denominator.
3. **Say:** Circle the number of items that matches the numerator. So if you have $\frac{1}{4}$ children, you will draw four children for the denominator and circle 1 to match the numerator. You are circling 1 out of 4 children.
4. Ask the pupils to hold up their work for you to see.

Closing (2 minutes)

1. **Say:** Today we learned about fractions with denominators of 2, 4 and 8. In the next lesson we will learn about fractions with denominators of 3, 6 and 9.
2. **Say:** Well done. Thank you class. Pupils say: Thank you.

Lesson Title: Identifying unit fractions with denominators 3, 6 and 9 using pictorial representation	Theme: Everyday Arithmetic – Fractions	
Lesson Number: M-02-127	Class/Level: Class 2	Time: 35 minutes

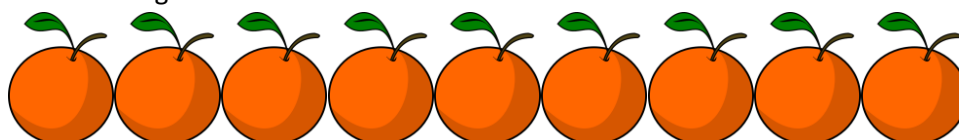
 <p>Learning Outcomes By the end of the lesson, pupils will be able to:</p> <ol style="list-style-type: none"> 1. Identify unit fractions with denominators 3, 6 and 9 using pictorial representation. 2. Write and read fractions using mathematical notation. 	 <p>Teaching Aids None</p>	 <p>Preparation None</p>
---	--	--

Opening (2 minutes)

1. In the previous lessons we learned how to identify, read, and write fractions with denominators of 2, 4 and 8. In this lesson we will learn how to identify, read, and write fractions with denominators of 3, 6 and 9.

Introduction to the New Material (10 minutes)

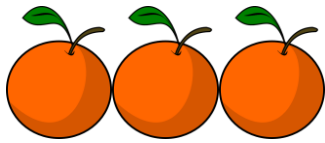
1. Write: $\frac{1}{3}$, $\frac{1}{6}$ and $\frac{1}{9}$ on the board.
2. **Say:** The first fraction is one third. The second fraction is one sixth, and the third fraction is one ninth.
3. **Say:** When we look at the first fraction, $\frac{1}{3}$, we know that we are referring to one third of a whole.
4. Draw a circle on the board and divide it in 3 parts. Shade in one of the 3 parts of the circle.
5. **Say:** Here is one third of a circle.
6. Draw a circle on the board and divide it in into 6 parts. Shade in one of the 6 parts.
7. **Say:** Here is one sixth of a circle.
8. Draw a circle on the board and divide it in into 9 parts. Shade in one of the 9 parts.
9. **Say:** Here is one ninth of a circle.
10. **Say:** The number on the bottom tells you how many total parts. It is called the denominator.
11. **Say:** The number on the top tells you how many of the total parts you are talking about. It is called the numerator.
12. Write: $\frac{1}{9}$
13. **Say:** This fraction is one ninth. I know from the number on the bottom there are 9 total parts. I know from the number on the top that this fraction is talking about 1 of the 9 total parts.
14. Draw 9 oranges.



15. Circle 1 of the 9 oranges.
16. **Say:** I have circled $\frac{1}{9}$ of the oranges. 1 out of 9 oranges.

Guided Practice (10 minutes)

1. Draw 3 oranges on the board.



2. **Say:** Please draw 3 oranges on your paper.
3. Write: $\frac{1}{3}$
4. **Say:** What is this number? (Answer: one third)
5. **Ask:** How many total oranges are in this fraction? (Answer: 3)
6. **Say:** Remember the total amount is on the bottom. It is the denominator.
7. **Ask:** How many should we circle to represent $\frac{1}{3}$? (Answer: 1)
8. Circle 1 orange.
9. Draw 6 bananas on the board.
10. **Say:** Please draw 6 bananas on your paper.
11. **Ask:** How do I write one sixth? (Answer: $\frac{1}{6}$)
12. **Say:** Please circle $\frac{1}{6}$ of the bananas.
13. **Ask:** How many did you circle? (Answer: 1)
14. Circle 1 banana.
15. **Ask:** In the number $\frac{1}{6}$, which number is the denominator? (Answer: 6)




Independent Practice (11 minutes)

1. Write on the board:
 $\frac{1}{6}$ mangoes $\frac{1}{9}$ children $\frac{1}{6}$ butterflies $\frac{1}{3}$ shoes
2. **Say:** Draw the total number of items in the fraction, the denominator.
3. **Say:** Circle the number of items that matches the numerator. So if you have $\frac{1}{6}$ shoes, you will draw 6 shoes for the denominator and circle 1 to match the numerator. You are circling 1 out of 6 shoes.
4. Ask the pupils to hold up their work for you to see.

Closing (2 minutes)

1. **Say:** Today we learned about fractions with denominators of 3, 6 and 9. In the next lesson we will learn about fractions with denominators of 5 and 10.
2. **Say:** Well done. Thank you class. Pupils say: Thank you.

Lesson Title: Identifying unit fractions with denominators 5 and 10 using pictorial representation	Theme: Everyday Arithmetic – Fractions	
Lesson Number: M-02-128	Class/Level: Class 2	Time: 35 minutes

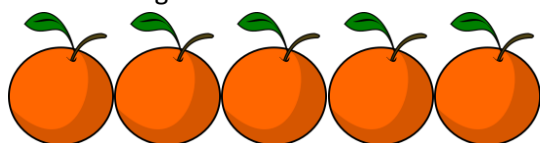
	<p>Learning Outcomes By the end of the lesson, pupils will be able to:</p> <ol style="list-style-type: none"> 1. Identify unit fractions with denominators of 5 and 10 using pictorial representation. 2. Write and read fractions using mathematical notation. 		<p>Teaching Aids None</p>		<p>Preparation None</p>
---	--	---	--------------------------------------	---	------------------------------------

Opening (2 minutes)

1. In the previous lessons we learned how to identify, read and write fractions with denominators of 2, 3, 4, 6, 8 and 9. In this lesson we will learn how to identify, read and write fractions with denominators of 5 and 10.

Introduction to the New Material (10 minutes)

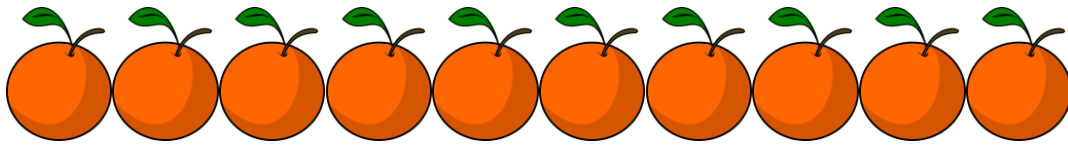
1. Write: $1/5$ and $1/10$ on the board.
2. **Say:** The first fraction is one fifth. The second fraction is one tenth.
3. **Say:** When we look at the first fraction, $1/5$, we know that we are referring to one fifth of a whole.
4. Draw a circle on the board and divide it in 5 parts. Shade in 1 of the 5 parts of the circle.
5. **Say:** Here is one fifth of a circle.
6. Draw a circle on the board and divide it in into 10 parts. Shade in 1 of the 10 parts.
7. **Say:** Here is one tenth of a circle.
8. **Say:** The number on the bottom tells you how many total parts. It is called the denominator.
9. **Say:** The number on the top tells you how many of the total parts you are talking about. It is called the numerator.
10. Write: $1/5$.
11. **Say:** This fraction is one fifth. I know from the number on the bottom there are 5 total parts. I know from the number on the top that this fraction is talking about 1 of the 5 total parts.
12. Draw 5 oranges.



13. Circle 1 of the 5 oranges.
14. **Say:** I have circled $1/5$ of the oranges – 1 out of 5 oranges.

Guided Practice (10 minutes)

1. Draw 10 oranges on the board.



2. **Say:** Please draw 10 oranges on your paper.
3. Write: $1/10$
4. **Say:** What is this number? (Answer: one tenth)
5. **Ask:** How many total oranges are in this fraction? (Answer: 10)
6. **Say:** Remember the total amount is on the bottom. It is the denominator.
7. **Ask:** How many oranges should we circle to represent $1/10$? (Answer: 1)
8. Circle 1 orange.
9. Draw 5 bananas on the board.
10. **Say:** Please draw 5 bananas on your paper.
11. **Ask:** How do I write one-fifth? (Answer: $1/5$)
12. **Say:** Please circle $1/5$ of the bananas.
13. **Ask:** How many did you circle? (Answer: 1)
14. Circle 1 banana.
15. **Ask:** In the number $1/5$, which number is the denominator? (Answer: 5)




Independent Practice (11 minutes)

1. Write on the board:
 $1/5$ mangoes $1/10$ children $1/5$ butterflies $1/10$ shoes
2. **Say:** Draw the total number of items in the fraction, the denominator.
3. **Say:** Circle the number of items that matches the numerator. So if you have $1/5$ shoes, you will draw 5 shoes for the denominator and circle 1 to match the numerator. You are circling 1 out of 5 shoes.
4. Ask the pupils to hold up their work for you to see.

Closing (2 minutes)

1. **Say:** Today we learned about fractions with denominators of 5 and 10. In the next lesson we will practise working with fractions with denominators from 2 to 10.
2. **Say:** Well done, you did great fraction work today. Thank you class. Pupils say: Thank you.

Lesson Title: Identifying unit fractions with denominators from 2 to 10 using pictorial representation	Theme: Everyday Arithmetic – Fractions	
Lesson Number: M-02-129	Class/Level: Class 2	Time: 35 minutes

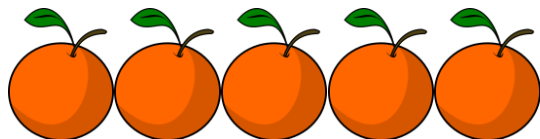
 <p>Learning Outcomes By the end of the lesson, pupils will be able to:</p> <ol style="list-style-type: none"> 1. Identify unit fractions with denominators from 2 to 10 using pictorial representation. 2. Write and read fractions using mathematical notation. 	 <p>Teaching Aids None</p>	 <p>Preparation None</p>
---	--	--

Opening (2 minutes)

1. **Say:** In previous lessons we learned how to identify, read and write fractions with denominators from 2 to 10. In this lesson we will review all the fractions with denominators from 2 to 10.

Introduction to the New Material (10 minutes)

1. Write: $\frac{1}{5}$ on the board.
2. **Say:** This fraction is $\frac{1}{5}$.
3. Draw:



4. **Say:** 5 is the denominator and 1 is the numerator. I will circle 1 of the 5 to show one fifth.
5. Circle 1 of the 5 oranges.
6. Write: $\frac{1}{7}$ on the board.
7. **Say:** This fraction is $\frac{1}{7}$.
8. Draw:



9. Circle 1 of the 7 butterflies.
10. **Say:** I circled 1 of the 7 of butterflies. $\frac{1}{7}$ of the butterflies are circled.

Guided Practice (10 minutes)

1. Draw 8 bananas on the board.
2. **Say:** Please draw 8 bananas on your paper.
3. Write: $\frac{1}{8}$
4. **Say:** What is this number? (Answer: one eighth)
5. **Ask:** How many total bananas are in this fraction? (Answer: 8)
6. **Say:** Remember the total amount is on the bottom. It is the denominator.
7. **Ask:** How many should we circle to represent $\frac{1}{8}$? (Answer: 1)
8. Circle 1 banana.
9. Draw 4 children on the board.
10. **Say:** Please draw 4 children on your paper.
11. **Ask:** How do I write one fourth? (Answer: $\frac{1}{4}$)
12. **Say:** Please circle $\frac{1}{4}$ of the children
13. **Ask:** How many did you circle? (Answer: 1)
14. Circle 1 of the children.
15. **Ask:** In the number $\frac{1}{4}$, which number is the denominator? (Answer: 4)




Independent Practice (11 minutes)

1. Write on the board:
 $\frac{1}{3}$ mangoes $\frac{1}{8}$ limes $\frac{1}{5}$ children $\frac{1}{10}$ shoes $\frac{1}{6}$ snakes $\frac{1}{7}$ flowers
2. **Say:** Draw the total number of items in the fraction, the denominator.
3. **Say:** Circle the number of items that matches the numerator.
4. Give pupils 10 minutes to draw then ask them to hold up their work for you to see.

Closing (2 minutes)

1. **Say:** Today we reviewed fractions with denominators from 2 to 10. In the next lesson we will identify non-unit fractions with denominators from 2 to 10.
2. **Say:** Well done. Thank you class. Pupils say: Thank you.

Lesson Title: Identifying non-unit fractions for denominators from 2 to 10 using pictorial representation	Theme: Everyday Arithmetic - Fractions	
Lesson Number: M-02-130	Class/Level: Class 2	Time: 35 minutes

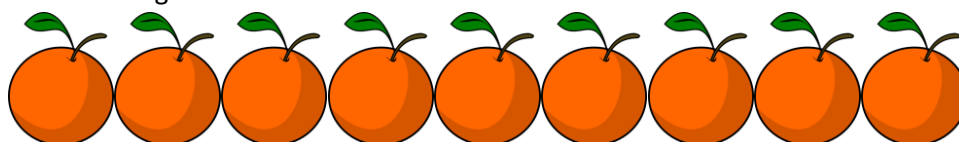
 Learning Outcomes By the end of the lesson, pupils will be able to identify non-unit fractions with denominators from 2 to 10 using pictorial representation.	 Teaching Aids None	 Preparation None
---	--	--

Opening (2 minutes)

1. **Say:** In previous lessons we learned how to identify unit fractions with various denominators.
2. **Say:** Today we will learn about identifying non-unit fractions with various denominators.

Introduction to the New Material (10 minutes)

1. **Say:** Unit fractions are fractions with 1 for the numerator, the number on the top, and a different number for the denominator, the number on the bottom.
2. **Say:** An example of a unit fraction is $\frac{1}{4}$.
3. **Say:** An example of a non-unit fraction is $\frac{3}{4}$.
4. Write: $\frac{4}{9}$.
5. **Say:** This fraction is four ninths. It is a non-unit fraction because the number on top is not 1.
6. **Say:** I know from the number on the bottom, the denominator, that there are 9 total parts.
7. **Say:** I know from the number on the top, the numerator, that this fraction is talking about 4 of the 9 total parts.
8. Draw 9 oranges.



9. Circle 4 of the 9 oranges.
10. **Say:** I have circled $\frac{4}{9}$ of the oranges – 4 out of 9 oranges.

Guided Practice (10 minutes)

1. Draw 8 bananas on the board.
2. **Say:** Please draw 8 bananas on your paper.
3. Write: $\frac{7}{8}$
4. **Say:** What is this number? (Answer: seven eighths)
5. **Ask:** How many total bananas are in this fraction? (Answer: 8)
6. **Say:** Remember the total amount is on the bottom. It is the denominator.
7. **Ask:** How many bananas should we circle to represent $\frac{7}{8}$? (Answer: 7)
8. Circle 7 bananas.
9. Draw 6 snakes on the board.

10. **Say:** Please draw 6 snakes on your paper.
11. **Ask:** How do I write three sixths? (Answer: $\frac{3}{6}$)
12. **Say:** Please circle $\frac{3}{6}$ of the snakes.
13. **Ask:** How many did you circle? (Answer: 3)
14. Circle 3 snakes.
15. **Ask:** In the number $\frac{3}{6}$ what number is the denominator? (Answer: 6)
16. Draw 5 butterflies on the board.
17. **Say:** Please draw 5 butterflies on your paper.
18. **Ask:** How do I write four fifths? (Answer: $\frac{4}{5}$)
19. **Say:** Please circle $\frac{4}{5}$ of the butterflies.
20. **Ask:** How many did you circle? (Answer: 4)
21. Circle 4 butterflies.
22. **Ask:** What is the numerator in this problem? (Answer: 4)




Independent Practice (11 minutes)

1. Write on the board:
 $\frac{3}{4}$ mangoes $\frac{2}{5}$ children $\frac{7}{8}$ butterflies $\frac{4}{6}$ houses
2. **Say:** Draw the total number of items in the fraction, the denominator.
3. **Say:** Circle the number of items that matches the numerator. So if you have $\frac{3}{4}$ children, you will draw 4 children for the denominator and circle 3 to match the numerator. You are circling 3 out of 4 children.
4. Give pupils 10 minutes to draw, then ask them to hold up their work for you to see.

Closing (2 minutes)

1. **Say:** Today we learned how to identify non-unit fractions with various denominators.
2. **Say:** In the next lesson we will learn more about multiplication.
3. **Say:** Well done. Thank you class. Pupils say: Thank you.

Lesson Title: Multiplication by 5 using counters	Theme: Everyday Arithmetic – Multiplication by 5	
Lesson Number: M-02-131	Class/Level: Class 2	Time: 35 minutes

	<p>Learning Outcomes By the end of the lesson, pupils will be able to multiply by 5 using counters.</p>		<p>Teaching Aids 1. 100 chart (at the end of the lesson) 2. Small stones/beads/ counters</p>		<p>Preparation 1. Create a 100 chart on the board. 2. Gather enough counters for each pupil to have a small handful.</p>
---	--	---	---	---	---

Opening (2 minutes)

1. **Say:** We learned in earlier lessons how to count by 5s.
2. **Say:** Today we will practise using counters to multiply by 5.

Introduction to the New Material (8 minutes)

1. **Say:** We will start with a review using the 100 chart to help us count by 5s.
2. **Say:** Say the numbers along with me: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, 95, 100
3. **Say:** Now we will clap the multiples of 5 together.
4. **Say:** We will start with 0 and clap every multiple of 5 up to 100.
5. Clap and **Say:** 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, 95, 100
6. **Say:** Now you will be my counters and help me count by 5s. Raise 1 hand and I will count each of your hands in a multiple of 5 since you have 5 fingers. When I have pointed to your hand you may put it down.
7. Point to the pupils as you count their hands in multiples of 5 until all pupils have been counted.

Guided Practice (10 minutes)

1. Give each pupil a handful of counters.
2. **Say:** We will practise counting together using the counters I have given you.
3. **Say:** I will count aloud until all of your counters have been counted.
4. **Say:** When you count, take 5 counters away from your group of counters and set them to the side. When we say, the next number, move 5 more counters from your larger group of counters and add them to the first 5.
5. **Say:** Keep counting aloud and moving your counters until you have counted all your counters. At the end, if you do not have enough to count by 5, add the number of counters you have left over.
6. Keep counting until the last pupil has counted their counters.
7. **Ask:** How many counters do you have?
8. Write the answers of multiple pupils on the board.

Independent Practice (14 minutes)

1. **Say:** Find a partner sitting close by you.
2. **Say:** Put your counters together in a pile.
3. **Say:** Count the items by 5s, using the 100 chart as a guide to help you.
4. Assist groups of pupils that may be having trouble.
5. If pupils finish before others, ask them the number of items they counted and have them count again to see if they get a different number.




Closing (1 minute)

1. **Say:** Today we practised using counters to multiply by 5s.
2. **Say:** In the next lesson we will learn to multiply by 5s using mental math.
3. **Say:** Great work today! Thank you class. Pupils say: Thank you.

[100 CHART]

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Lesson Title: Multiply by 5 using a number line	Theme: Everyday Arithmetic – Multiplication by 5	
Lesson Number: M-02-132	Class/Level: Class 2	Time: 35 minutes

	Learning Outcomes By the end of the lesson, pupils will be able to multiply by 5 using the number line.		Teaching Aids 1. 0-100 number line (at the end of the lesson) 2. Place marker for number line		Preparation Draw a 0-100 number line on the board.
---	---	---	--	---	--

Opening (2 minutes)

1. **Say:** In the previous lesson we used counters to multiply by 5.
2. **Say:** Today we will use the 0 to 100 number line to multiply by 5.

Introduction to the New Material (8 minutes)

1. Point to the 0-100 number line (at the end of the lesson).
2. **Say:** This number line starts at 0 and ends at 100. Each mark represents 1.
3. Write: $5 \times 2 =$
4. **Say:** This is asking me to find the answer when 5 is multiplied 2 times.
5. Jump the marker from 0 to 5, and then 5 to 10.
6. Complete the equation.
7. **Say:** $5 \times 2 = 10$
8. Write: $5 \times 10 =$
9. **Say:** This is asking me to find the answer when 5 is multiplied 10 times.
10. Jump the marker from 0 to 50 by 5s counting as you go: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50
11. Complete the equation.
12. **Say:** $5 \times 10 = 50$
13. Write: $5 \times 6 =$
14. **Say:** This is asking me to find the answer when 5 is multiplied 6 times.
15. Jump the marker from 0 to 30 by 5s counting as you go: 5, 10, 15, 20, 25, 30
16. Complete the equation.
17. **Say:** $5 \times 6 = 30$

Guided Practice (8 minutes)

1. Write $5 \times 3 =$
2. **Ask:** What is this asking me to find? (Answer: The answer when 5 is multiplied 3 times.)
3. Jump the marker from 0 to 15 by 5s counting as you go: 5, 10, 15
4. Complete the equation.
5. **Say:** $5 \times 3 = 15$
6. Write: $5 \times 8 =$
7. **Ask:** What is this asking me to find? (Answer: The answer when 5 is multiplied 8 times.)
8. **Say:** What is the answer? (Answer: 40)

9. Jump the marker from 0 to 40 by 5s counting as you go: 5, 10, 15, 20, 25, 30, 35, 40
10. Complete the equation.
11. **Say:** $5 \times 8 = 40$

Independent Practice (15 minutes)

1. Check pupils have an exercise book and a pencil. If they don't, tell pupils to work together with somebody who has. Or give a piece of chalk to some pupils and they can work at the board or a slate.
2. **Say:** Write the following equations in your exercise book:

$5 \times 9 =$ (Answer: 45)	$5 \times 5 =$ (Answer: 25)	$5 \times 4 =$ (Answer: 20)
$5 \times 2 =$ (Answer: 10)	$5 \times 7 =$ (Answer: 35)	$5 \times 6 =$ (Answer: 30)
$5 \times 1 =$ (Answer: 5)		

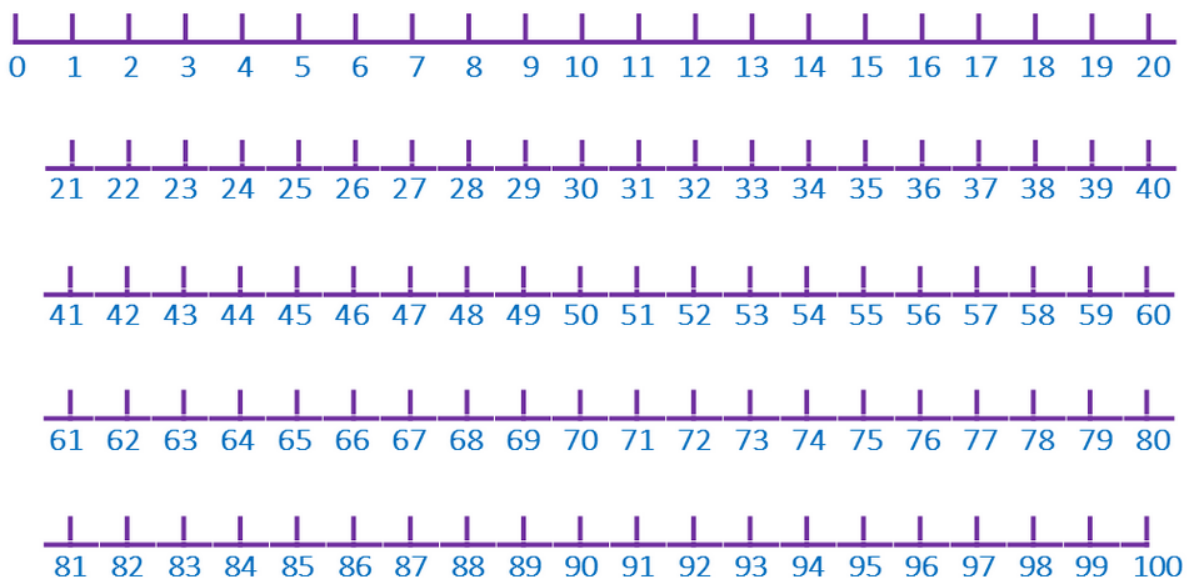
3. **Say:** Use the number line to solve the equations and write the answer to each problem.
4. Give pupils 10 minutes to write the equations and solutions then as 7 volunteers (a combination of boys and girls) to write the answers on the board.
5. **Say:** Give yourself 1 clap for each question you answered correctly.

Closing (2 minutes)




1. **Say:** Today you learned how to use the number line to multiply by 5.
2. **Say:** In the next lesson you will learn how to use the multiplication chart to multiply by 5.
3. **Say:** Well done. Thank you class. Pupils say: Thank you.

[0-100 NUMBER LINE]

Note: Draw in one continuous line across the board.



Lesson Title: Multiplication table of 5	Theme: Everyday Arithmetic – Multiplication by 5	
Lesson Number: M-02-133	Class/Level: Class 2	Time: 35 minutes

	Learning Outcomes By the end of the lesson, pupils will be able to read and write the multiplication table of 5.		Teaching Aids Multiplication table (at the end of the lesson)		Preparation Create a multiplication table on the board.
---	--	---	---	---	---

Opening (2 minutes)

1. Hold up 5 fingers. **Say:** Here are 5 fingers.
2. Hold up 5 more fingers. **Say:** Here are 5 more fingers. **Say:** Together that makes 10.
3. Point to a pupil. **Say:** _____ has 5 fingers as well. **Say:** Together that makes 15 fingers.
4. Point to the same pupil. **Say:** _____ has 5 more fingers as well. **Say:** Together that makes 20 fingers.
5. **Say:** Today we will learn how to read and write the multiplication table for 5s.

Introduction to the New Material (8 minutes)

1. Point to the multiplication table. **Say:** Here is our multiplication table. It is helping us learn our multiples.
2. Point to the 5 on the left side of the table. Run your finger along the 5 line until you reach 60.
3. **Say:** These are the multiples of 5.
4. Point to the 5 on the left and the 1 at the top.
5. **Say:** When I multiply the numbers 5 and 1...
6. Slide your fingers together until they meet at the 5. **Say:** The answer is 5.
7. Point to the 5 on the left and the 4 at the top.
8. **Say:** When I multiply the numbers 5 and 4...
9. Slide your fingers together until they meet at the 20. **Say:** The answer is 20.
10. **Say:** The multiplication table works 2 ways. I can change the position of my hands and use it that way.
11. Point to the 5 on the top and the 4 on the left.
12. **Say:** When I multiply the numbers 4 and 5...
13. Slide your fingers together until they meet at the 20. **Say:** The answer is still 20.

Guided Practice (12 minutes)

1. **Say:** Now we will read the multiples of 5 together going across.
2. **Say:** Please say the numbers with me: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60
3. **Say:** Now we will use the table to multiply aloud. Repeat after me.
4. Point to the 5 on the left side and keep it there, and move your finger at the top as you recite the facts.
5. **Say:** 5 times 1 equals 5.

6. **Say:** 5 times 2 equals 10.
7. **Say:** 5 times 3 equals 15.
8. **Say:** 5 times 4 equals 20.
9. **Say:** 5 times 5 equals 25.
10. **Say:** 5 times 6 equals 30.
11. **Say:** 5 times 7 equals 35.
12. **Say:** 5 times 8 equals 40.
13. **Say:** 5 times 9 equals 45.
14. **Say:** 5 times 10 equals 50.
15. **Say:** 10 times 11 equals 55.
16. **Say:** 10 times 12 equals 60.
17. Write: $5 \times 8 = 40$
18. **Say:** Multiplication problems are written like this. The 'x' in the middle is read as 'times'. The '=' is read as 'equals'.
19. **Say:** This problem is read 5 times 8 equals 40.
20. Write: $5 \times 5 =$ **Ask:** Who can tell me what this says? (Answer: 5 times 5 equals)
21. **Say:** Look at the multiplication table and find 5 on the left and 5 on the top.
22. **Ask:** Where do they meet on the table? (Answer: 25)
23. **Say:** 10 times 5 equals 50. **Ask:** What is 5×11 ? (Answer: 55) **Ask:** What is 5×10 ? (Answer: 50)
Ask: What is 5×7 ? (Answer: 35)

Independent Practice (12 minutes)

1. **Say:** Now it is time to work on your own. Copy down the following problems. Once you have copied them, use the multiplication table to solve them:
 $5 \times 1 =$ (Answer: 5) $5 \times 2 =$ (Answer: 10) $5 \times 3 =$ (Answer: 15) $5 \times 4 =$ (Answer: 20)
 $5 \times 5 =$ (Answer: 25) $5 \times 6 =$ (Answer: 30) $5 \times 7 =$ (Answer: 35) $5 \times 8 =$ (Answer: 40)
 $5 \times 9 =$ (Answer: 45) $5 \times 10 =$ (Answer: 50) $5 \times 11 =$ (Answer: 55) $5 \times 12 =$ (Answer: 60)
2. Walk around the room assisting students. Give pupils 10 minutes to solve the problems, then ask 12 volunteers to write the answers on the board.




Closing (1 minute)

1. **Say:** Today we learned how to read and write the multiplication table for 5s. In the next lesson we will use mental math to multiply by 5s. Thank you class. Pupils say: Thank you.

[MULTIPLICATION TABLE]

x	1	2	3	4	5	6	7	8	9	10	11	12
1	1	2	3	4	5	6	7	8	9	10	11	12
2	2	4	6	8	10	12	14	16	18	20	22	24
3	3	6	9	12	15	18	21	24	27	30	33	36
4	4	8	12	16	20	24	28	32	36	40	44	48
5	5	10	15	20	25	30	35	40	45	50	55	60
6	6	12	18	24	30	36	42	48	54	60	66	72
7	7	14	21	28	35	42	49	56	63	70	77	84
8	8	16	24	32	40	48	56	64	72	80	88	96
9	9	18	27	36	45	54	63	72	81	90	99	108
10	10	20	30	40	50	60	70	80	90	100	110	120
11	11	22	33	44	55	66	77	88	99	110	121	132
12	12	24	36	48	60	72	84	96	108	120	132	144

Lesson Title: Mental strategies for multiplication by 5	Theme: Everyday Arithmetic – Multiplication by 5	
Lesson Number: M-02-134	Class/Level: Class 2	Time: 35 minutes

 Learning Outcomes By the end of this lesson, pupils will be able to solve problems involving multiplication by 5 mentally.	 Teaching Aids None	 Preparation None
--	--	--

Opening (2 minutes)

1. **Say:** In previous lessons we learned to multiply by 5 using counters and the multiplication chart.
2. **Ask:** What can we do if we don't have counters or our chart? (Answer: Use mental maths.)
3. **Say:** We can use mental maths.
4. **Say:** Mental maths is when you use your brain to solve maths problems without the help of other tools.

Introduction to the New Material (8 minutes)

1. **Say:** We will start using mental maths with our 5s.
2. **Say:** We have practised multiplying the number 5 by various numbers in our past few lessons, so we are familiar with the answer to certain equations.
3. **Say:** For example, we know that $5 \times 2 = 10$. To solve this equation we just need to add $5 + 5$, or we can memorize the answer.
4. **Say:** But what if we have not memorized the answer to the equations? How can we solve the problems?
5. **Say:** We can count by 5s in our head.
6. **Say:** For example, if we have the equation 5×4 , we can count in our heads: 5, 10, 15, 20. Then we have the answer 20.
7. **Say:** Let's say the equation is 5×8 . We can count up in our heads: 5, 10, 15, 20, 25, 30, 35, 40

Guided Practice (8 minutes)

1. **Say:** Let's apply mental maths to our 5s together.
2. **Say:** If I have the equation 5×3 , I know that I need to add the number 5 three times.
3. **Say:** 5, 10, 15. I started at 5, then counted up 5 more to 10, then counted up 5 more to 15.
4. **Ask:** What if my equation is 5×6 ? How can I solve it? (Answer: count up 5, 10, 15, 20, 25, 30)
5. **Say:** I can count up by 5 six times: 5, 10, 15, 20, 25, 30
6. **Say:** My answer is 30.
7. **Ask:** My equation is now 5×9 . What is the solution? (Answer: 45)
8. **Say:** Explain how you solved the equation. (Example answer: Count up by 5s nine times.)
9. **Say:** When using mental maths, it is important to keep track of how many times you have added a number.

10. **Say:** Another way to use mental maths is to memorize the multiplication chart and practise the maths facts.
11. **Say:** Repeat after me: 5 times 1 equals 10.
12. **Say:** 5 times 2 equals 10.
13. **Say:** 5 times 3 equals 15.
14. **Say:** 5 times 4 equals 20.
15. **Say:** 5 times 5 equals 25.
16. **Say:** 5 times 6 equals 30.
17. **Say:** 5 times 7 equals 35.
18. **Say:** 5 times 8 equals 40.
19. **Say:** 5 times 9 equals 45.
20. **Say:** 5 times 10 equals 50.
21. **Say:** 5 times 11 equals 55.
22. **Say:** 5 times 12 equals 60.




Independent Practice (16 minutes)

1. Check pupils have an exercise book and a pencil. If they don't, tell pupils to work together with somebody who has. Or give a piece of chalk to some pupils and they can work at the board or a slate.
2. **Say:** Write the following equations in your exercise book:
 $5 \times 11 =$ (Answer: 55) $5 \times 9 =$ (Answer: 45) $5 \times 5 =$ (Answer: 25) $5 \times 10 =$ (Answer: 50)
 $5 \times 7 =$ (Answer: 35) $5 \times 1 =$ (Answer: 5) $5 \times 12 =$ (Answer: 60) $5 \times 3 =$ (Answer: 15)
 $5 \times 2 =$ (Answer: 10) $5 \times 4 =$ (Answer: 20)
3. **Say:** Use mental maths. Write the answer to each problem.
4. Give pupils 14 minutes to complete the problems.
5. **Say:** Once you have finished, swap books with someone sitting nearby and check your friend's answers.

Closing (1 minute)

1. **Say:** Today we used mental maths to solve multiplication equations for 5s.
2. **Say:** In the next lesson we will solve word problems using pictures for 5s.
3. **Say:** Well done. Thank you class. Pupils say: Thank you.

Lesson Title: Word problems involving times 5 using pictures	Theme: Everyday Arithmetic – Multiplication by 5	
Lesson Number: M-02-135	Class/Level: Class 2	Time: 35 minutes

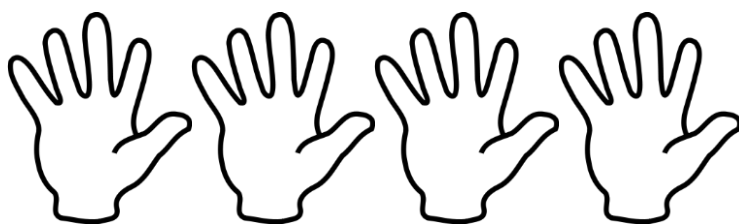
 Learning Outcomes By the end of the lesson, pupils will be able to solve one step word problems involving times 5 using pictures.	 Teaching Aids None	 Preparation None
---	--	--

Opening (2 minutes)

1. **Say:** In previous lessons we learned to multiply by 5 using counters, the multiplication chart and mental math.
2. **Say:** Today we will learn to solve word problems involving times 5 using pictures.

Introduction to the New Material (6 minutes)

1. **Say:** I will first show you how to solve word problems involving times 5. Then we will work on them together.
2. **Say:** 4 students in the class each have 5 fingers. How many fingers do they have in all?
3. **Say:** I will start by drawing 4 sets of fingers. 5 fingers for each child.

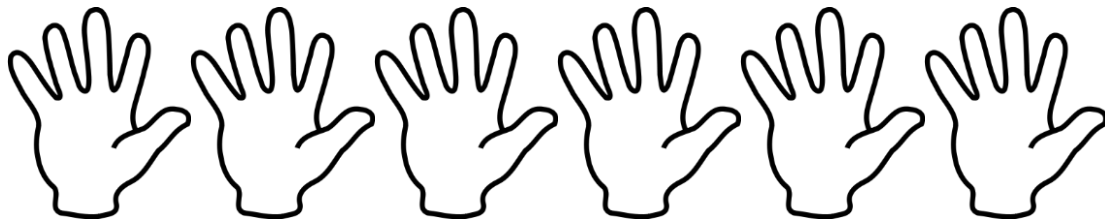


4. **Say:** Now I can count by 5s. How many fingers do I have in all? 5, 10, 15, 20.
5. Write: $5 \times 4 = 20$
6. **Say:** My equation is $5 \times 4 = 20$

Guided Practice (6 minutes)

1. **Say:** Let's do the next problem together.
2. **Say:** 6 children each have 5 fingers. How many fingers do they have in all?
3. **Ask:** What is the first step? (Answer: Draw 6 sets of fingers with 5 fingers in each set.)

4. Draw:



5. **Ask:** What is the next step? (Answer: Count the fingers in sets of 5.)
6. **Ask:** How many fingers do they have in total? (Answer: 30)
7. **Ask:** What is the equation? (Answer: $5 \times 6 = 30$)
8. **Write:** $5 \times 6 = 30$

Independent Practice (20 minutes)

1. Check pupils have an exercise book and a pencil. If they don't, tell pupils to work together with somebody who has. Or give a piece of chalk to some pupils and they can work at the board or a slate.
2. Write the following problems on the board and read them aloud to the pupils.

7 children each have 5 pencils. How many pencils do they have in all? (Answer: $5 \times 7 = 35$)

5 children each have 5 toes. How many toes do they have in all? (Answer: $5 \times 5 = 25$)

8 boys each have 5 mangoes. How many mangos do they have in all? (Answer: $5 \times 8 = 40$)




6 girls each have 5 limes. How many limes do they have in all? (Answer: $5 \times 6 = 30$)

3. **Say:** Solve the word problems above using pictures. Make sure to write and solve the equation that goes along with the word problems.
4. For pupils who are not able to read independently, support them by reading the word problems aloud to them as they work.
5. Give pupils 15 minutes to draw and solve the problems, then ask 4 volunteers to write the equations and answers on the board.

Closing (1 minute)

1. **Say:** Today we used pictures to solve word problems involving times 5. In the next lesson we will learn about patterns in pictures involving multiplication.
2. **Say:** Well done. Thank you class. Pupils say: Thank you.

Lesson Title: Patterns in pictures involving multiplication	Theme: Algebra – Number patterns multiplication	
Lesson Number: M-02-136	Class/Level: Class 2	Time: 35 minutes

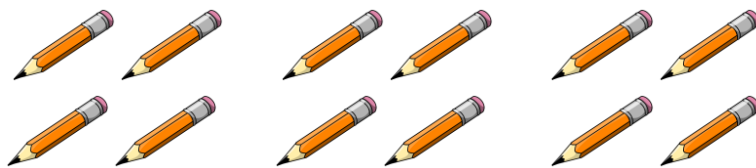
 Learning Outcomes By the end of the lesson, pupils will be able to recognise and make repeating patterns in pictures involving multiplication.	 Teaching Aids None	 Preparation None
--	--	--

Opening (2 minutes)

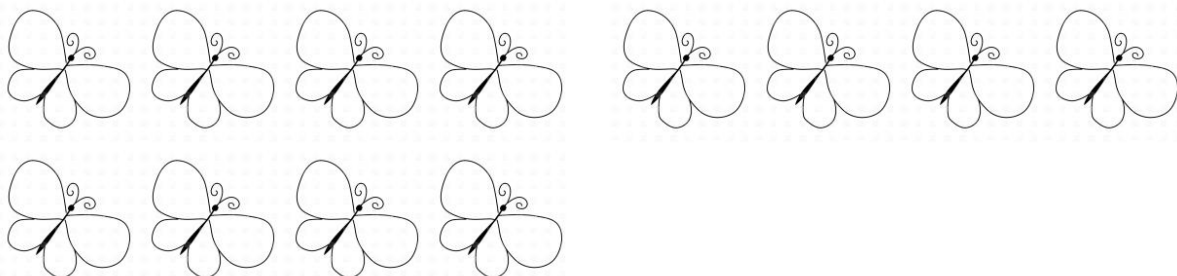
- Say:** In previous lessons we learned about multiplication and solving multiplication problems using counters, the number line, the multiplication table and mental strategies.
- Say:** Today we will learn how to recognise and make repeating patterns in pictures for multiplication.

Introduction to the New Material (10 minutes)

- Write: $2 \times 6 =$
- Draw:



- Say:** My equation is 2×6 . I created a pattern with pictures showing 2 pencils 6 times.
- Finish the equation: $2 \times 6 = 12$
- Write: $4 \times 3 =$
- Draw:



- Say:** My equation is 4×3 . I created a pattern with pictures showing 4 butterflies 3 times.
- Finish the equation: $4 \times 3 = 12$

Guided Practice (10 minutes)

1. Write: $2 \times 5 =$
2. **Ask:** Can anyone read this equation for me? (Answer: 2 times 5)
3. **Ask:** Who would like to draw the pattern for 2×5 on the board using bananas?
4. Call on a volunteer with their hand raised to come to the board and draw 5 groups of bananas with 2 bananas in each.
5. **Ask:** What is the answer to the equation? (Answer: 10)
6. Write: $7 \times 3 =$
7. **Ask:** Can anyone read this equation for me? (Answer: 7 times 3)
8. **Ask:** Who would like to draw the pattern for 7×3 on the board using mangoes?
9. Call on a volunteer with their hand raised to come to the board and draw 3 groups of mangoes with 7 mangoes in each.
10. **Ask:** What is the answer to the equation? (Answer: 21)

Independent Practice (11 minutes)

1. Check pupils have an exercise book and a pencil. If they don't, tell pupils to work together with somebody who has. Or give a piece of chalk to some pupils and they can work at the board or a slate.
2. Write on the board:

children: $5 \times 6 =$ (Answer: 30)

houses: $3 \times 5 =$ (Answer: 15)




snakes: $2 \times 9 =$ (Answer: 18)

3. **Say:** Work independently to draw the following patterns for multiplication.
4. **Say:** When you are finished, check your work with another pupil.

Closing (2 minutes)

1. **Say:** Today we practised recognising and making repeated patterns in pictures involving multiplication.
2. **Say:** Well done. Thank you class. Pupils say: Thank you.

Lesson Title: Patterns that involve multiplication using sound	Theme: Algebra – Number Patterns multiplication	
Lesson Number: M-02-137	Class/Level: Class 2	Time: 35 minutes

 Learning Outcomes By the end of the lesson, pupils will be able to recognise and make repeating patterns that involve multiplication using sound.	 Teaching Aids None	 Preparation None
---	--	--

Opening (2 minutes)

1. **Say:** In the previous lesson we learned how to recognize and make repeating patterns in pictures for multiplication.
2. **Say:** In today's lesson we will learn how to recognize and make repeating patterns using sound.

Introduction to the New Material (8 minutes)

1. **Say:** You will remember that in an earlier lesson we used sound when learning about addition.
2. **Say:** Sound can help us learn about multiplication as well.
3. Write: $2 \times 2 =$
4. **Say:** My equation is 2 times 2.
5. Do the following: clap clap (pause) clap clap
6. **Say:** I have just clapped the multiplication equation 2×2 . I clapped 1 set of 2 and then a second set of 2. The total number of claps was 4.
7. Finish the equation: $2 \times 2 = 4$
8. Write: $4 \times 3 =$
9. **Say:** My equation is 4 times 3.
10. Do the following: clap clap clap clap (pause) clap clap clap clap (pause) clap clap clap clap
11. **Say:** I have just clapped the multiplication equation 4×3 . I clapped 1 set of 4, then a second set of 4 and then a third set of 4. The total number of claps was 12.
12. Finish the equation: $4 \times 3 = 12$

Guided Practice (8 minutes)

1. Write: $3 \times 3 =$
2. **Ask:** Can anyone read this equation for me? (Answer: 3 times 3)
3. **Ask:** Who would like to clap the pattern for me?
4. Call on a volunteer with their hand raised to clap the equation, 3 claps, 3 times each.
5. **Ask:** What is the answer to the equation? (Answer: 9)
6. Finish the equation: $3 \times 3 = 9$
7. Write: $2 \times 4 =$
8. **Ask:** Can anyone read this equation for me? (Answer: 2 times 4)
9. **Ask:** Who would like to clap the pattern for me?
10. Call on a volunteer with their hand raised to clap the equation, 2 claps, 4 times.

11. **Ask:** What is the answer to the equation? (Answer: 8)

12. Finish the equation: $2 \times 4 = 8$

Independent Practice (15 minutes)

1. Check pupils have an exercise book and a pencil. If they don't, tell pupils to work together with somebody who has. Or give a piece of chalk to some pupils and they can work at the board or a slate.
2. Write on the board:

$$2 \times 7 = (\text{Answer: } 14)$$

$$3 \times 9 = (\text{Answer: } 27)$$

$$8 \times 2 = (\text{Answer: } 16)$$

$$5 \times 5 = (\text{Answer: } 25)$$

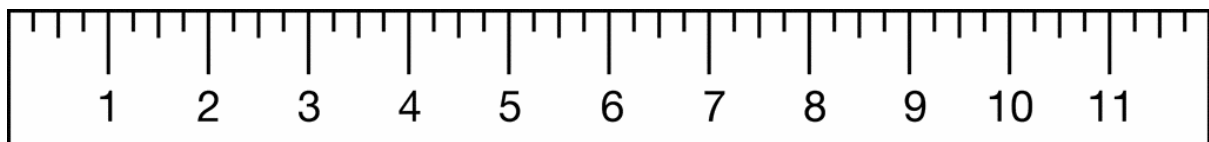
$$6 \times 4 = (\text{Answer: } 24)$$

3. **Say:** Write down the equations from the board.
4. **Say:** Work with a partner to clap the equations. Write down the answers to each equation.




Closing (2 minutes)

1. **Say:** Today we practised recognizing and making repeated patterns in pictures involving multiplication using sound.
2. **Say:** Well done. Thank you class. Pupils say: Thank you.

Appendix A



Lesson Title: Drawing patterns for number sequences that involve multiplication	Theme: Algebra – Number patterns multiplication	
Lesson Number: M-02-138	Class/Level: Class 2	Time: 35 minutes

 Learning Outcomes By the end of the lesson, pupils will be able to draw patterns for number sequences that involve multiplication.	 Teaching Aids None	 Preparation None
--	--	--

Opening (2 minutes)

- Say:** In previous lessons we learned how to recognise and make patterns for multiplication using sound and pictures. In today's lesson we will create patterns for multiplication through number sequences.

Introduction to the New Material (8 minutes)

- Write: 2 __ 6 __ 10 12 __ 16 __ 20
- Say:** This is a number pattern for multiplication. This pattern is for the multiples of 2.
- Say:** The first number is 2 and the third number is 6. I know that $2 \times 1 = 2$ and $2 \times 3 = 6$.
- Say:** The missing number is 4. I know this because $2 \times 2 = 4$.
- Fill in the first blank with the number 4, so it looks like this: 2 4 6 __ 10 12 __ 16 __ 20
- Say:** I can fill in the rest of the missing numbers by recalling the multiples of 2.
- Say:** $2 \times 3 = 6$. The next equation is 2×4 . The answer to that equation is 8.
- Fill in the second blank with the number 8 so it looks like this: 2 4 6 8 10 12 __ 16 __ 20
- Say:** $2 \times 5 = 10$. 10 is already in the pattern. $2 \times 6 = 12$. 12 is in the pattern as well.
- Say:** $2 \times 7 = 14$. This is the next missing number.
- Fill in the next blank so it looks like this: 2 4 6 8 10 12 14 16 __ 20
- Say:** Now there is just one number missing.
- Say:** The next equation in the multiples of 2 is 2×8 . $2 \times 8 = 16$. That number is already in the pattern.
- Say:** The next equation in the multiples of 2 is 2×9 . The answer to that equation is 18. This is our last missing number.
- Say:** I have now solved all the missing numbers in the pattern.
- Finish the equation: 2 4 6 8 10 12 14 16 18 20.
- Say:** Now I have completed the pattern for the multiples of 2.

Guided Practice (8 minutes)

- Say:** Let's complete the next pattern together.
- Write: 3 __ 9 12 __ 18 __ 24 27
- Ask:** This is the pattern for multiples of what number? (Answer: 3)
- Say:** The first equation is $3 \times 1 = 3$.
- Ask:** What is the next equation? (Answer: 3×2)
- Ask:** What is the answer to the equation? (Answer: 6)
- Say:** That is our first missing number, so I will write that in the equation.

8. Write 6 between 3 and 9 in the pattern.
9. **Ask:** What is the next equation? (Answer: 3×3)
10. **Ask:** What is the answer to the equation? (Answer: 9)
11. **Say:** We have the answer to that equation in the pattern.
12. **Ask:** What is the next equation? (Answer: 3×4)
13. **Ask:** What is the answer to that equation? (Answer: 12)
14. **Say:** We have the answer to that equation in the pattern.
15. **Ask:** What is the next equation? (Answer: 3×5)
16. **Ask:** What is the answer to that equation? (Answer: 15)
17. **Say:** That is our next missing number, so I will write that in the equation.
18. Write 15 between 12 and 18 in the pattern.
19. **Ask:** What is the next equation? (Answer: 3×6)
20. **Ask:** What is the answer to the equation? (Answer: 18)
21. **Say:** We have the answer to that equation in the pattern.
22. **Ask:** What is the next equation? (Answer: 3×7)
23. **Ask:** What is the answer to the equation? (Answer: 21)
24. **Say:** That is our next missing number, so I will write that in the equation.
25. Write 21 between 18 and 24 in the pattern.
26. **Ask:** What is the next equation? (Answer: 3×8)
27. **Ask:** What is the answer to the equation? (Answer: 24)
28. **Say:** We have the answer to that equation in the pattern.
29. **Ask:** What is the next equation? (Answer: 3×9)
30. **Ask:** What is the answer to the equation? (Answer: 27)
31. **Say:** We have the answer to that equation in the pattern.
32. **Say:** We have completed the pattern.
33. It should look like this: 3 6 9 12 15 18 21 24 27

Independent Practice (15 minutes)




1. Write the following patterns on the board:

4 ___ 12 16 ___ 24	5 ___ 15 ___ ___ 30 ___ 40
7 ___ 21 ___ 35	9 ___ 27 ___ 45 ___ 63 ___
2. **Say:** Copy down the patterns on the board including spaces for the missing numbers.
3. **Say:** Work on your own to identify which multiples the patterns follow. Fill in the missing numbers with the correct multiples.
4. Give the pupils 12 minutes to complete the patterns, then **Ask** 4 volunteers to volunteer to fill in the missing numbers.
5. **Say:** Give yourself a clap for each correct answer you wrote.

Closing (2 minutes)

1. **Say:** Well done, today we worked with patterns for number sequences that involved multiples. In the next lesson we will find and describe multiplication patterns outside the classroom. Thank you class. Pupils say: Thank you.

Lesson Title: Finding and describing patterns out of the classroom that involve multiplication	Theme: Algebra – Number patterns multiplication	
Lesson Number: M-02-139	Class/Level: Class 2	Time: 35 minutes

	Learning Outcomes By the end of the lesson, pupils will be able to find and describe patterns outside of the classroom that involve multiplication.		Teaching Aids None		Preparation None
---	---	---	------------------------------	---	----------------------------

Opening (2 minutes)

- Say:** In previous lessons we learned how to recognise and make patterns for multiplication using sound and pictures, and to complete number sequences with multiplication.
- Say:** In today's lesson we will find and describe patterns outside of the classroom that involve multiplication.

Introduction to the New Material (3 minutes)

- Say:** Before we go outside the classroom, let's see if we can spot any patterns involving multiplication inside the classroom.
- Point out any patterns you identified inside the classroom. Describe the pattern. (Example: Desks that sit 3 pupils; 3, 6, 9, 12, 15)

Guided Practice (5 minutes)

- Say:** I will give you some instructions before we go outside the classroom.
- Say:** Your task is to find patterns in the school or outside the classroom that involve multiplication.
- Say:** You must stay on the school grounds and you must be able to see me at all times.
- Say:** You cannot enter another classroom without asking the teacher first. We do not want to disrupt other classes.
- Say:** Once you have identified a pattern, write or draw what you see on a piece of paper or in your exercise book. Write down the location of where you found the pattern.
- Say:** Make sure to write down the multiplication equation that goes along with the pattern you saw. For example, if you saw 3 flowers of the same colour, your equation will be $3 \times 1 = 3$.
- Say:** You may work with a partner.
- Say:** When you hear my signal, return to the classroom.
- Say:** Remember not to disrupt other classes.
- Ask:** Are there any questions? (Answer any questions the pupils may have.)




Independent Practice (17 minutes)

1. **Say:** Now we will start our hunt for patterns.
2. **Say:** If you need help, please find me. I will be walking around the school grounds.
3. Support pupils to locate patterns and discuss them for 16 minutes, then call pupils into the classroom.

Closing (8 minutes)

1. **Ask:** Who would like to share a pattern they found? Have 8 pupils (4 boys and 4 girls) share their patterns with the class.
2. **Say:** Please come to the board and describe the pattern you found. Write the equation for the pattern and remember to tell us where you found it.
3. **Say:** Well done. Thank you class. Pupils say: Thank you.

Lesson Title: Finding and describing patterns out of the classroom that involve multiplication	Theme: Algebra – Number patterns multiplication	
Lesson Number: M-02-140	Class/Level: Class 2	Time: 35 minutes

 Learning Outcomes By the end of the lesson, pupils will be able to find and describe patterns out of the classroom that involve multiplication.	 Teaching Aids None	 Preparation None
---	--	--

Opening (2 minutes)

1. **Ask:** Can anyone tell me what we did in our previous lesson? (Answer: went on a multiplication pattern hunt)
2. **Say:** In the previous lesson we went on a multiplication pattern hunt outside the classroom. Today we will continue our hunt.

Introduction to the New Material (2 minutes)

1. **Say:** Remember that a pattern is something that repeats in the same way. You may find patterns in a building. You may find them on a tree. You may find them on the ground. Patterns are everywhere. Look carefully.

Guided Practice (4 minutes)

1. **Say:** Here is a reminder of the instructions from yesterday.
2. **Say:** Your task is to find patterns in the school, outside the classroom that involves multiplication.
3. **Say:** You must stay on the school grounds and be able to see me at all times.
4. **Say:** You cannot enter another classroom without asking the teacher first. We do not want to disrupt other classes.
5. **Say:** Once you have identified a pattern, write or draw what you see on a piece of paper or in your exercise book. Write down the location of where you found the pattern.
6. **Say:** Make sure to write down the multiplication equation that goes along with the pattern you saw. For example, if you saw 3 flowers of the same colour, your equation will be $3 \times 1 = 3$.
7. **Say:** You may work with a partner.
8. **Say:** When you hear my signal, return to the classroom.
9. **Say:** Remember not to disrupt other classes.
10. **Ask:** Are there any questions? (Answer any questions the pupils may have.)




Independent Practice (15 minutes)

1. **Say:** Now we will continue our hunt for multiplication patterns.
2. **Say:** If you need help, please find me. I will be walking around the school grounds.
3. Support the pupils to find and discuss multiplication patterns around the school for 14 minutes then call them back to the classroom.

Closing (12 minutes)

1. **Ask:** Who would like to share their pattern? Have 6 volunteers (3 boys and 3 girls) share their patterns with the class.
2. **Say:** Please come to the board and describe the pattern you found. Write the equation for the pattern and remember to tell us where you found it.
3. **Say:** Well done. Thank you class. Pupils say: Thank you.

Lesson Title: Estimation and measurement of volume using non-standard units of measurement	Theme: Measurement and Estimation - Volume and Capacity	
Lesson Number: M-02-141	Class/Level: Class 2	Time: 35 minutes

	<p>Learning Outcomes</p> <p>By the end of the lesson, pupils will be able to estimate volume using non-standard units and everyday language and measure small mass using non-standard units.</p>		<p>Teaching Aids</p> <ol style="list-style-type: none"> 1. Small and large buttercups and tomato cups 2. Jerry can 3. Small and large containers of various sizes filled with varying amounts of dirt or small stones 4. Bucket for dirt or stones to use during measuring 		<p>Preparation</p> <ol style="list-style-type: none"> 1. Gather small and large buttercups, tomato cups and a jerry can. 2. Gather small and large containers of various sizes and fill with varying amounts of dirt or small stones.
---	---	---	---	---	--

Opening (2 minutes)

1. **Say:** In previous lessons we've learned how to estimate area and mass using non-standard units.
2. **Say:** In the next few lessons we will learn about capacity and volume using non-standard units.

Introduction to the New Material (8 minutes)

1. Hold up a small buttercup.
2. **Say:** This is a small buttercup. It is used to measure dry goods like beans, sugar and rice.
3. Hold up a large buttercup.
4. **Say:** This is a large buttercup. It is also used to measure dry goods like beans, sugar and rice but in larger quantities.
5. Hold up a tomato cup.
6. **Say:** This is a tomato cup. It is used to measure very small amounts like chilli peppers, salt and groundnuts.
7. Hold up a jerry can.
8. **Say:** This is a jerry can. Jerry cans contain oil when you first get them, and then as you know they are later used to carry water.
9. **Say:** We will use buttercups, tomato cups and jerry cans to estimate volume.
10. **Say:** Volume is the amount a container holds. Capacity is the amount a container can hold.
11. **Say:** The difference between the two is that volume is the actual amount being held and capacity is the possible amount that can be held.

Guided Practice (22 minutes)

1. **Say:** We will estimate the volume of multiple containers using our non-standard units of measurement: buttercups, tomato cups and jerry cans.
2. The activities in this guided practise will vary depending on the containers available.




3. Have pupils estimate how many small or large buttercups or tomato cups of stones/dirt are in the various containers.
4. Write the estimates on the board.
5. Then together with the help of pupils, use small or large buttercups or tomato cups to measure the actual amount in the containers.
6. Write the actual measurements on the board.
7. Discuss if the estimates were close or far away from the actual amount.

Independent Practice (*0 minutes*)

Closing (*3 minutes*)

1. **Say:** Today we learned about different non-standard units of measurement and how to estimate volume using these units of measurement.
2. **Say:** In the next lesson we will use these non-standard units of measurement to estimate capacity.
3. **Say:** Well done. Thank you class. Pupils say: Thank you.

Lesson Title: Estimation and measurement of capacity using non-standard units of measurement	Theme: Measurement and Estimation – Volume and Capacity	
Lesson Number: M-02-142	Class/Level: Class 2	Time: 35 minutes

 <p>Learning Outcomes By the end of the lesson, pupils will be able to estimate capacity using non-standard units and everyday language and measure small mass using non-standard units.</p>	 <p>Teaching Aids 1. Small and large buttercups and tomato cups 2. Jerry can 3. Small and large containers of various sizes filled to capacity with dirt or small stones 4. Bucket for dirt or stones to use during measuring</p>	 <p>Preparation 1. Gather small and large buttercups, tomato cups and a jerry can. 2. Gather small and large containers of various sizes and fill to capacity with dirt or small stones.</p>
--	---	--

Opening (2 minutes)

1. **Say:** In the previous lesson we learned how to estimate and measure volume using non-standard units.
2. **Say:** In this lesson we will learn how to estimate and measure capacity using non-standard units.

Introduction to the New Material (8 minutes)

1. **Say:** We will first review our non-standard units of measurement.
2. Hold up a small buttercup.
3. **Say:** This is a small buttercup. It is used to measure dry goods like beans, sugar and rice.
4. Hold up a large buttercup.
5. **Say:** This is a large buttercup. It is also used to measure dry goods like beans, sugar and rice but in larger quantities.
6. Hold up a tomato cup.
7. **Say:** This is a tomato cup. It is used to measure very small amounts like chilli peppers, salt and groundnuts.
8. Hold up a jerry can.
9. **Say:** This is a jerry can. Jerry cans contain oil when you first get them, and then as you know they are later used to carry water.
10. **Say:** We will use buttercups, tomato cups and jerry cans to estimate capacity.
11. **Say:** Capacity is the total amount a container can hold.
12. **Say:** The difference between the capacity and volume is that capacity is the possible amount that can be held while volume is the actual amount being held in a container.




Guided Practice *(22 minutes)*

1. **Say:** We will estimate the capacity of multiple containers using our non-standard units of measurement: buttercups, tomato cups and jerry cans.
2. The activities in this guided practise will vary depending on the containers available.
3. Have pupils estimate how many small or large buttercups or tomato cups of stones/dirt the various containers could hold.
4. Write the estimates on the board.
5. Then together with the help of pupils, use small or large buttercups or tomato cups to fill the containers and measure the actual amount the containers hold.
6. Write the actual measurements on the board.
7. Discuss if the estimates were close or far away from the actual amount.

Independent Practice *(0 minutes)***Closing** *(3 minutes)*

1. **Say:** Today we learned about different non-standard units of measurement and how to estimate capacity using these units of measurement.
2. **Say:** In the next lesson we will learn how to compare and order capacity using non-standard units.
3. **Say:** Well done. Thank you class. Pupils say: Thank you.

Lesson Title: Comparing and ordering capacity using non-standard units	Theme: Measurement and Estimation – Volume and Capacity	
Lesson Number: M-02-143	Class/Level: Class 2	Time: 35 minutes

 <p>Learning Outcomes By the end of the lesson, pupils will be able to compare and order capacity using non-standard units and everyday language.</p>	 <p>Teaching Aids 1. Small and large buttercups and tomato cups 2. Jerry can 3. Small and large containers of various sizes filled to capacity with dirt or small stones 4. Bucket for dirt or stones to use during measuring</p>	 <p>Preparation 1. Gather small and large buttercups, tomato cups and a jerry can. 2. Gather small and large containers of various sizes and fill to capacity with dirt or small stones.</p>
---	---	--

Opening (2 minutes)

1. **Say:** In previous lessons we learned how to estimate and measure volume and capacity using non-standard units.
2. **Say:** In this lesson we will learn how to compare and order capacity using non-standard units.

Introduction to the New Material (10 minutes)

1. **Say:** Here are 3 different sized containers filled with _____ (dirt/stone).
2. **Say:** I am going to measure the number of _____ (buttercups/tomato cups) of _____ (dirt/stone) each container holds. I will use the same unit of measurement for each.
3. After the capacity of each container is measured, write the number of units on the board.
4. Move the containers and order them from smallest to largest based on the units the container holds.
5. **Say:** I have placed the containers in order from smallest to largest based on the number of units each container holds.

Guided Practice (20 minutes)




1. **Say:** We will compare and order the capacity of multiple containers using our non-standard units of measurement: buttercups, tomato cups and jerry cans.
2. The activities in this guided practise will vary depending on the containers available.
3. Together with the help of pupils, using small or large buttercups or tomato cups, fill the containers and measure the actual amount the containers hold.
4. Use the same unit of measurement for each.
5. Write the actual measurements on the board.
6. With the help of the pupils, compare and place the containers in order from smallest to largest capacity.

Independent Practice (*0 minutes*)

Closing (*3 minutes*)

1. **Say:** Today we learned how to compare and order capacity of containers.
2. **Say:** In the next lesson we will learn how to compare and order volume using non-standard units.
3. **Say:** Well done. Thank you class. Pupils say: Thank you.

Lesson Title: Comparing and ordering volume using non-standard units	Theme: Measurement and Estimation - Volume and Capacity	
Lesson Number: M-02-144	Class/Level: Class 2	Time: 35 minutes

	<p>Learning Outcomes</p> <p>By the end of this lesson, pupils will be able to compare and order volume using non-standard units and everyday language.</p>		<p>Teaching Aids</p> <ol style="list-style-type: none"> 1. Small and large buttercups and tomato cups 2. Jerry can 3. Small and large containers with various amounts of dirt or small stones 4. Bucket for dirt or stones to use during measuring 		<p>Preparation</p> <ol style="list-style-type: none"> 1. Gather small and large buttercups, tomato cups and a jerry can. 2. Gather small and large containers and fill with various amounts of dirt or small stones.
---	---	---	---	---	---

Opening (2 minutes)

1. **Say:** In previous lessons we learned how to compare and order containers by capacity.
2. **Say:** In this lesson we will learn how to compare and order containers by volume using non-standard units.

Introduction to the New Material (10 minutes)

1. **Say:** Here are 3 different sized containers with various amounts of _____ (dirt/stone).
2. **Say:** I am going to measure the number of _____ (buttercups/tomato cups) of _____ (dirt/stone) each container currently holds. I will use the same unit of measurement for each.
3. After the volume of each container is measured, write the number of units on the board.
4. Move the containers and order them from smallest to largest based on the units the container currently holds.
5. **Say:** I have placed the containers in order from smallest to largest based on the container's volume.

Guided Practice (20 minutes)




1. **Say:** We will compare and order the volume of multiple containers using our non-standard units of measurement: buttercups, tomato cups and jerry cans.
2. The activities in this guided practise will vary depending on the containers available.
3. Together with the help of pupils, using small or large buttercups or tomato cups, measure the amount the containers currently hold.
4. Use the same unit of measurement for each.
5. Write the actual measurements on the board.
6. With the help of the pupils, compare and place the containers in order from smallest to largest volume.

Independent Practice (0 minutes)

Closing (3 minutes)

1. **Say:** Today we learned how to compare and order containers by volume.
2. **Say:** In the next lesson we will learn how to solve word problems involving volume and capacity.
3. **Say:** Well done. Thank you class. Pupils say: Thank you.

Lesson Title: Word problems involving volume and capacity using non-standard units	Theme: Measurement and Estimation – Volume and Capacity	
Lesson Number: M-02-145	Class/Level: Class 2	Time: 35 minutes

 Learning Outcomes By the end of the lesson, pupils will be able to solve word problems involving volume and capacity using non-standards units.	 Teaching Aids None	 Preparation None
---	--	--

Opening (2 minutes)

- Say:** In previous lessons we learned how to estimate, measure, compare and order containers by volume and capacity.
- Say:** In this lesson we will learn how to solve word problems involving volume and capacity.

Introduction to New Material (5 minutes)

- Say:** Marima and Bintu were having a disagreement about the capacity of a jerry can in large buttercups. Marima estimated the jerry can could hold 15 large buttercups. Bintu estimated the jerry can could hold 25 large buttercups. What was the difference in buttercups between Marima and Bintu's estimates?
- Say:** The word difference in the problem tells me that I will need to subtract to find out the answer. Bintu's estimate was larger at 25 buttercups. Marima's estimate was smaller at 15 buttercups.
- Write: $25 - 15 =$
- Say:** When I subtract 15 from 25, the answer I get is 10.
- Finish the equation: $25 - 15 = 10$

Guided Practice (8 minutes)

- Say:** We will work on the next problem together.
- Say:** Abdul and Tamba went to the market to buy rice. Abdul bought 13 large buttercups of rice. Tamba bought 20 large buttercups of rice. How many large buttercups of rice did they buy in all?
- Ask:** Is this an addition problem or a subtraction problem? (Answer: addition)
- Ask:** What is the equation for the word problem? (Answer: $20 + 13 =$)
- Write: $20 + 13 =$
- Ask:** What is the answer to the equation? (Answer: 33)
- Complete the equation: $20 + 13 = 33$
- Say:** We will do another word problem together.
- Say:** Esther bought 5 small bags of groundnuts. Each bag contained 3 tomato cups of groundnuts. How many tomato cups of groundnuts did she buy in all?
- Ask:** What will we use to solve this problem? (Answer: multiplication)
- Ask:** What is the equation? (Answer: $5 \times 3 =$)
- Write: $5 \times 3 =$
- Ask:** What is the answer to the equation? (Answer: 15)

14. Complete the equation: $5 \times 3 = 15$




Independent Practice (18 minutes)

1. Check pupils have an exercise book and a pencil. If they don't, tell pupils to work together with somebody who has. Or give a piece of chalk to some pupils and they can work at the board or a slate.
2. **Say:** Create a word problem using volume or capacity.
3. **Say:** Write down the word problem or at least the important facts in the word problem.
4. **Say:** Once you are finished, find another pupil who has finished to be your partner.
5. **Say:** Decide which person will share their word problem first. The other person will solve the problem.
6. **Say:** Read or tell your word problem to your partner and give them time to solve it.
7. **Say:** When it is solved correctly, switch roles.
8. **Say:** Once both partners have correctly solved a problem, find a new partner to share your word problem with.

Closing (2 minutes)

1. **Say:** Today we learned how to solve word problems involving volume and capacity.
2. **Say:** In the next lesson we will learn how to tell time using a clock face.
3. **Say:** Well done. Thank you class. Pupils say: Thank you.

Lesson Title: Drawing 12 hours on the clock face	Theme: Measurement and Estimation – Time	
Lesson Number: M-02-146	Class/Level: Class 2	Time: 35 minutes

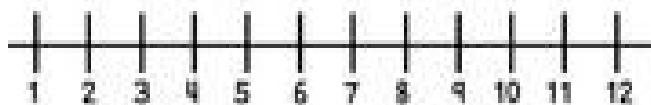
 <p>Learning Outcomes By the end of the lesson, pupils will be able to:</p> <ol style="list-style-type: none"> 1. Draw the 12 hours on the clock face. 2. Know the number of hours in a day. 	 <p>Teaching Aids The number line 1 to 12 (at the end of the lesson)</p>	 <p>Preparation Draw a number line 1 to 12 on the board.</p>
--	--	--

Opening (4 minutes)

1. **Ask:** What time do you get up in the morning?
2. Record pupil answers on the board.
3. **Ask:** What time do you go to bed at night?
4. Record pupil answers on the board.
5. **Say:** Today we will be learning how to read a clock and we will learn about the number of hours in a day.

Introduction to the New Material (10 minutes)

1. **Say:** In previous lessons we worked with the number line, all the way up to 1000.
2. **Say:** Today we will work with the numbers 1 to 12.



3. **Say:** Here is the number line for numbers 1 to 12. Let's say them together.
4. **Say:** 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12.
5. **Say:** These are the same numbers that are on a clock. 1 to 12.
6. **Say:** In a day there are 24 hours. The numbers 1 to 12 are in the morning, and the numbers 1 to 12 are in the afternoon. Together they make 24.
7. **Say:** The first 12 in the day is called noon. The second 12 in the day is called midnight.
8. **Say:** Each of the numbers from 1 to 12 are found on a clock face.
9. Draw:



10. **Say:** This is a clock face with the numbers 1 to 12.
11. Point to the number 12. **Say:** You will see that 12 is at the very top

12. Point to the 6. **Say:** You will see that the number 6 is at the very bottom.
13. Point to the number 3. **Say:** You will see that 3 is at the very right.
14. Point to the 9. **Say:** You will see that the number 9 is at the very left.
15. Point to the number 1. **Say:** The number 1 is here, and the numbers then go in order all the way up to 12.

Guided Practice (8 minutes)

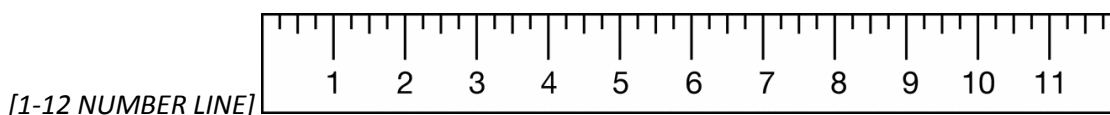
1. **Say:** Draw a large circle on your paper.
2. Draw a large circle on the board. Make a line at the top of the circle.
3. **Say:** Make a small line like this at the very top of your circle.
4. Write the number 12 below the line on the clock face.
5. **Say:** Write the number 12 below the line you made.
6. **Say:** Make a small line like this at the very bottom of your circle.
7. Write the number 6 above the line on the clock face.
8. **Say:** Write the number 6 above the line you made.
9. **Say:** Make a small line like this at the very right on your circle.
10. Write the number 3 to the left of the line on the clock face.
11. **Say:** Write the number 3 to the left of the line you made.
12. **Say:** Make a small line like this at the very left on your circle.
13. Write the number 9 to the right of the line on the clock face.
14. **Say:** Write the number 9 to the right of the line you made.
15. **Say:** You have now written the hours 12, 3, 6 and 9 on your clock.

Independent Practice (10 minutes)




1. **Say:** In just a moment you will work with a partner to finish placing the numbers on your clock face.
2. **Say:** You will see that between the 12 and the 3 there are 2 numbers, 1 and 2.
3. **Say:** Between the 3 and the 6 there are 2 numbers, 4 and 5.
4. **Say:** Between the 6 and the 9 there are 2 numbers, 7 and 8.
5. **Say:** Between the 9 and the 12 there are 2 numbers, 10 and 11.
6. **Say:** The numbers are all evenly spaced around the clock face.
7. **Say:** Make a small line first to show where the number will go. Then clearly write the number on the clock face.
8. **Say:** You may now work with a partner. However, you must each create your own clock face.

Closing (3 minutes)

1. **Say:** Today we learned how to draw the 12 hours on the clock face. We learned how many hours are in a day. In the next lesson we will learn how to tell time in hours and half hours.



Lesson Title: Telling the time in hours and half Hours	Theme: Measurement and Estimation – Time	
Lesson Number: M-02-147	Class/Level: Class 2	Time: 35 minutes

	Learning Outcomes By the end of the lesson, pupils will be able to tell the time in hours and half hours using a 12-hour clock face.		Teaching Aids None		Preparation Draw the clock face with numbers 1 to 12 on it on the board.
---	--	---	------------------------------	---	--

Opening (4 minutes)

- Say:** In the previous lesson you learned how to draw the numbers on the clock face and learned that there are 24 hours in a day.
- Say:** Today you will learn how to tell time in hours and half hours.

Introduction to the New Material (10 minutes)

- Say:** In the previous lesson we learned that the clock has the numbers 1 to 12 placed on it as you can see on the clock face on the board.



- Say:** There are 2 more parts of the clock we will learn about today. They will help us tell time in hours and half hours.
- Say:** The first part is called the little hand. The little hand helps us tell time by hours.
- Draw a little hand on the clock and point it at 3.
- Say:** The little hand is pointing to the 3.
- Say:** The second part is called the big hand. The big hand helps us tell time by minutes.
- Draw a big hand on the clock and point it at 12. The clock should look like this:



- Say:** The big hand is pointing to the 12.
- Say:** Whenever the big hand is pointing exactly to the 12, it tells us we are exactly on an hour, so we look at the little hand to see what number it is pointing to.
- Say:** Since the little hand is on the 3, we know that the time is 3 o'clock.
- Erase the little hand on the 3 and draw it pointing to the 7.
- Say:** The big hand is still pointing exactly to the 12 and the little hand is pointing to the 7. The clock says it is now 7 o'clock.
- Erase the big hand and draw it pointing to the 6. Erase the small hand and draw it halfway between the 7 and the 8. It should look like this:



14. **Say:** I have now moved the big hand, and it is pointing directly at the 6. When the big hand is pointing to the 6, it now tells us we are on a half hour.
15. **Say:** You will see that the small hand is no longer exactly on the 7 but is halfway to the 8. The time still starts with 7 because we are not at 8 yet.
16. **Say:** When we read the clock we start with the minutes, which in this case is half. Then we add the hour, which is 7. So the clock says half past 7.
17. Erase the short hand and draw it halfway between the 9 and the 10.
18. **Say:** Now the clock says half past 9.

Guided Practice (10 minutes)

1. **Say:** Draw a large circle on your paper.
2. Erase both the little hand and the big hand on the clock on the board.
3. **Say:** Label your clock with the numbers 1 to 12.
4. **Say:** Draw a little hand and point it to the number 4.
5. **Ask:** Who would like to come draw the little hand on my clock on the board?
6. Call on a pupil with their hand raised to draw the little hand on the number 4.
7. **Say:** Draw a big hand and point it to the number 12.
8. **Ask:** Who would like to come draw the big hand on my clock on the board?
9. **Ask:** What time does our clock now say? (Answer: 4 o'clock)
10. **Say:** Now erase the big hand on your clock.
11. **Say:** Draw the big hand and point it to the number 6.
12. **Ask:** Who would like to come draw the big hand on my clock on the board?
13. **Ask:** Who would like to come and move the little hand to the correct spot (Answer: halfway between 4 and 5)
14. **Ask:** What time does our clock now say? (Answer: half past 4)




Independent Practice (10 minutes)

1. **Say:** You will now work with a partner.
2. **Say:** Take turns drawing time on your clock face. Draw to the hour and half hour.
3. **Say:** Show your partner what you have drawn and have them tell you what time you have drawn. If they give you the incorrect time, ask them to try again.
4. **Say:** Once they have told you the correct time, it is their turn to draw the hands on their clock face.
5. **Say:** Practise drawing on your clock face and telling time until I have told you time is up.

Closing (2 minutes)

1. **Say:** Today we learned how to tell time in hours and half hours. In the next lesson we will learn to tell time in quarters of an hour. Well done. Thank you class. Pupils say: Thank you.

Lesson Title: Telling the time in quarters of an Hour	Theme: Measurement and Estimation – Time	
Lesson Number: M-02-148	Class/Level: Class 2	Time: 35 minutes

	<p>Learning Outcomes</p> <p>By the end of the lesson, pupils will be able to tell the time in quarters of an hour using the 12-hour clock face.</p>		<p>Teaching Aids</p> <p>None</p>		<p>Preparation</p> <p>Draw a clock face with the numbers 1 to 12 on it.</p>
---	--	---	---	---	--

Opening (2 minutes)

1. **Say:** In previous lessons you learned how tell time in hours and half hours.
2. **Say:** Today you will learn how to tell time in quarters of an hour.

Introduction to the New Material (10 minutes)

1. **Say:** In the previous lesson we learned how to tell time to the hour and half hour. We know when the big hand is on the 12 the time is exactly on an hour.
2. **Say:** We know when the big hand is on the 6 the time is on a half hour.
3. **Say:** There are 2 other important numbers we learned about in the very beginning when we were placing our numbers on the clock face, 3 and 9.
4. **Say:** When the big hand points to the 3 it is pointing to a quarter. We say ‘quarter past’.
5. **Say:** When the big hand points to the 9 it is pointing to another quarter. We say ‘quarter to’.
6. Draw a little hand on the clock and point it just past 5.
7. **Say:** The little hand is pointing just past 5.
8. Draw a big hand on the clock and point it to 3.
9. **Say:** The big hand is pointing to the 3.
10. The clock should look like this:



11. **Say:** The clock now shows quarter past 5. You will see that the little hand has moved a little bit past the 5 because the time is no longer 5 o’clock but it is now quarter past 5.
12. **Say:** It’s important to know that both the little and big hand move around the clock.

Guided Practice (10 minutes)

1. **Say:** Draw a large circle on your paper.
2. Erase both the little hand and the big hand on the clock on the board.
3. **Say:** Label your clock with the numbers 1 to 12.
4. **Say:** Draw a big hand and point it to the number 9.

5. **Ask:** Who would like to come draw the big hand on my clock on the board?
6. Call on a pupil with hand raised to draw the big hand on the number 9.
7. **Say:** The clock now says quarter to, but we do not know what hour yet.
8. Draw a little hand and point just before the number 2.
9. **Say:** Draw the little hand on your clock so it is almost at the number 2 like this:
10. The clock on the board should look like this:



11. **Ask:** The little hand is now almost at what number? (Answer: 2)
12. **Say:** The clock now says quarter to 2.
13. Erase the little and big hands.
14. **Ask:** Who would like to come draw the big hand on my clock for a quarter past?
15. The big hand should be pointing to the 3.
16. **Ask:** Who would like to draw the little hand on my clock so the clock shows a quarter past 7?
17. The clock should look like this:






Independent Practice (10 minutes)

1. **Say:** You will work with a partner again today.
2. **Say:** Take turns drawing time on your clock face. Draw to the hour, half hour, and quarter past, and quarter to.
3. **Say:** Show your partner what you have drawn and have them tell you what time you have drawn. If they give you the incorrect time, ask them to try again.
4. **Say:** Once they have told you the correct time, it is their turn to draw the hands on their clock face.
5. **Say:** Practise drawing on your clock face and telling time until I have told you time is up.

Closing (3 minutes)

1. **Ask:** What number does the big hand point to for a quarter past? (Answer: 3)
2. **Ask:** What number does the big hand point to for a quarter to? (Answer: 9)
3. **Say:** Today we learned how to tell time in quarters of an hour. In the next lesson we will learn to tell time in minutes.
4. **Say:** Well done. Thank you class. Pupils say: Thank you.

Lesson Title: Telling the time to 5 minutes	Theme: Measurement and Estimation – Time	
Lesson Number: M-02-149	Class/Level: Class 2	Time: 35 minutes

	<p>Learning Outcomes By the end of the lesson, pupils will be able to:</p> <ol style="list-style-type: none"> 1. Tell the time to 5 minutes using a 12 hour clock face. 2. Know the number of minutes in an hour. 		<p>Teaching Aids None</p>		<p>Preparation Draw a clock face with the numbers 1 – 12 on it on the board.</p>
---	--	---	--------------------------------------	---	---

Opening (2 minutes)

1. **Say:** In the previous lessons we learned how to tell time to the hours, half hours and quarters.
2. **Say:** Today we will learn how to tell time to 5 minutes.

Introduction to the New Material (10 minutes)

1. **Say:** We know from previous lessons that when the big hand is on the 12 the time is exactly on an hour.
2. **Say:** We know when the big hand is on the 6 the time is on a half hour.
3. **Say:** We know when the big hand points to the 3 it is pointing to a quarter. We say ‘quarter past’.
4. **Say:** We know when the big hand points to the 9 it is pointing to another quarter. We say ‘quarter to’.
5. **Say:** Each number on the clock stands for an hour when the little hand is pointing to it and a multiple of 5 when the big hand is pointing to it.
6. Point to the 1.
7. **Say:** Starting with the 1 we say 5.
8. Point to the 2.
9. **Say:** The 2 represents 10 minutes.
10. **Say:** Let’s finish counting all the minutes.
11. Point to each number as you say the number of minutes it represents.
12. **Say:** 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60.
13. **Say:** There are 60 minutes in an hour.
14. Draw the big hand pointing to the 4.
15. Draw the little hand pointing between the 6 and the 7.
16. **Say:** The big hand shows 20 minutes past.
17. **Say:** The little hand shows between 6 and 7, so together with the big hand it is 20 minutes past 6.
18. **Say:** When the big hand is before or on the 6 we say ‘minutes past’ when telling the time.
19. **Say:** When the big hand is after the 6 we say ‘minutes to’ when telling time.

Guided Practice (10 minutes)

1. **Say:** Draw a large circle on your paper.
2. Erase both the little hand and the big hand on the clock on the board.
3. **Say:** Label your clock with the numbers 1 to 12. Draw a big hand and point it to number 7.
4. **Say:** Draw the little hand and point it halfway between 3 and 4.
5. Draw the big hand and little hand so the clock looks like this:



6. **Ask:** What time does the clock say now? (Answer: 25 minutes to 4)
7. **Say:** 25 minutes to 4.
8. **Say:** Now erase the big hand and the little hand.
9. Draw a big hand and point it to the number 11.
10. **Say:** Draw a big hand and point it to the number 11.
11. Draw the little hand on your clock so it is almost at the number 7.
12. **Say:** Draw the little hand on your clock so it is almost at the number 7.
13. The clock on the board should look like this:



14. **Ask:** What time does the clock say now? (Answer: 5 minutes to 7)
15. **Say:** 5 minutes to 7.




Independent Practice (10 minutes)

1. **Say:** You will work with a partner again today.
2. **Say:** Take turns drawing time on your clock face. Draw to the hour, half hour, quarter and 5-minute intervals.
3. **Say:** Show your partner what you have drawn and have them tell you what time you have drawn. If they give you the incorrect time, ask them to try again.
4. **Say:** Once they have told you the correct time, it is their turn to draw the hands on their clock face.
5. **Say:** Practise drawing on your clock face and telling time until I have told you time is up.

Closing (3 minutes)

1. **Ask:** What number does the big hand point to for twenty minutes past? (Answer: 4)
2. **Ask:** What number does the big hand point to for twenty minutes to? (Answer: 8)
3. **Say:** We have now learned how to tell time in hours, half hours, quarters and 5-minute intervals.
4. **Say:** Well done. In the next lesson we will learn about seconds and minutes. Thank you class.
Pupils say: Thank you.

Lesson Title: Seconds in a minute	Theme: Measurement and Estimation – Time	
Lesson Number: M-02-150	Class/Level: Class 2	Time: 35 minutes

	<p>Learning Outcomes By the end of the lesson, pupils will be able to:</p> <ol style="list-style-type: none"> 1. Know the number of seconds in a minute. 2. Count the length in seconds of a short activity. 		<p>Teaching Aids None</p>		<p>Preparation Draw a 12 hour clock face with the numbers on it on the board.</p>
---	---	---	--------------------------------------	---	--

Opening (2 minutes)

1. **Say:** In previous lessons we learned how to tell time to the hours, half hours, quarters and 5-minute intervals.
2. **Say:** Today we will learn about even smaller measures of time, seconds.

Introduction to the New Material (8 minutes)

1. **Say:** In previous lessons we learned that there are 60 minutes in an hour. The clock is set up in intervals of 5 minutes.
2. Point to the numbers on the clock as you say the following intervals:



3. **Say:** 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60.
4. **Say:** There are 60 minutes in an hour.
5. **Say:** Within each minute there are 60 seconds. 60 seconds make up 1 minute. Seconds are counted in intervals of 1.
6. **Say:** We will use multiplication to determine how many seconds are in different quantities of minutes.
7. **Say:** We know that there are 60 seconds in a minute. Let's figure out how many seconds in 2 minutes.
8. **Say:** We will count by 10s: 10, 20, 30, 40, 50, 60. That is 1 minute. 70, 80, 90, 100, 110, 120. That is 2 minutes.
9. **Say:** There are 120 seconds in 2 minutes.

Guided Practice (6 minutes)

1. **Say:** Let's determine how many seconds are in different activities.
2. Write: 4 minutes of running.
3. **Say:** We know that each minute has 60 seconds in it.

4. **Say:** Let's count together the number of seconds in 4 minutes:
5. **Say:** Count with me.
6. **Say:** 10, 20, 30, 40, 50, 60 – 1 minute.
7. **Say:** 70, 80, 90, 100, 110, 120 – 2 minutes.
8. **Say:** 120, 140, 150, 160, 170, 180 – 3 minutes.
9. **Say:** 190, 200, 210, 220, 230, 240 – 4 minutes.
10. **Say:** We know that there are 240 seconds in 4 minutes.
11. **Ask:** If we want to add 1 minute, how many seconds do we need to add? (Answer: 60 seconds)
12. **Say:** Let's add 1 more minute, starting at 240.
13. **Say:** Count with me. 250, 260, 270, 280, 290, 300.
14. **Ask:** How many seconds are in 5 minutes? (Answer: 300 seconds)

Independent Practice (17 minutes)

1. **Say:** You will be working on your own to complete this activity.
2. Write:

5 minutes of walking	7 minutes of running	4 minutes of eating	3 minutes of talking
6 minutes of reading	8 minutes of writing		
3. **Say:** Write these activities and their times in minutes in your exercise book.
4. **Say:** Count by 10s and determine how many seconds are in each quantity of minutes. Write the answers in your exercise book.
5. **Say:** When you are finished, compare your answers with another pupil.

Closing (2 minutes)

1. **Ask:** How many seconds are in a minute? (Answer: 60)
2. **Ask:** How many minutes are in an hour? (Answer: 60)
3. **Say:** Today you learned how to determine how many seconds are in different quantities of minutes. Well done. Thank you class. Pupils say: Thank you.

FUNDED BY



IN PARTNERSHIP WITH



NOT FOR SALE

Document information:

Leh Wi Learn (2016). "*Maths, Class 02, Term 03, lesson plan.*" A resource produced by the Sierra Leone Secondary Education Improvement Programme (SSEIP). DOI: 10.5281/zenodo.3745098.

Document available under Creative Commons Attribution 4.0, <https://creativecommons.org/licenses/by/4.0/>.

Uploaded by the EdTech Hub, <https://edtechhub.org>.

For more information, see <https://edtechhub.org/oer>.

Archived on Zenodo: April 2020.

DOI: 10.5281/zenodo.3745098

Please attribute this document as follows:

Leh Wi Learn (2016). "*Maths, Class 02, Term 03, lesson plan.*" A resource produced by the Sierra Leone Secondary Education Improvement Programme (SSEIP). DOI 10.5281/zenodo.3745098. Available under Creative Commons Attribution 4.0 (<https://creativecommons.org/licenses/by/4.0/>). A Global Public Good hosted by the EdTech Hub, <https://edtechhub.org>. For more information, see <https://edtechhub.org/oer>.