# BSICS

# UNIT OPENER

MATH DEPARTMENT - 4TH GRADE

# Unit 1 Opener: Factors and Multiples

## "African Dance of Numbers: Unraveling Factors and Multiples through Traditional Dance!"

Objective: In this lively African-centered unit opener, 4th-grade students will discover the wonders of Factors and Multiples while immersing themselves in the vibrant rhythms of African dance. Through interactive activities, students will deepen their understanding of Factors and Multiples in the context of African culture and traditions.

Materials Needed:

African music or drumming background music (optional)

Open space for dancing

Large chart paper or whiteboard

Markers or colored pencils

African-inspired decorations (optional)

Activity Sequence:

Welcome to the African Dance of Numbers :

Gather the young dancers and introduce them to the exciting African Dance of Numbers! Let them know they will embark on a rhythmic journey to explore the magic of Factors and Multiples while embracing the spirited African dance traditions.

Discovering African Dance:

Play African music or drumming background music to set the mood.
Show a short video or perform a demonstration of African dance, showcasing the vibrant movements, rhythm, and cultural significance.

Patterns and Multiples Dance:

Explain that African dance often involves patterns and repetitive movements, just like the concept of Factors and Multiples.
Guide students through a dance routine that incorporates patterns and multiples of a given number. For example, they can dance in groups of 3, 4, and 6 to represent multiples.

African Dance Factor Hunt:
Organize an African Dance Factor Hunt in the dance space. Display numbers representing Factors and Multiples on cards.
Students will dance around the space, find the numbers, and identify whether they are factors or multiples of a given number through dance movements.

Dance Math Challenge:
Present fun math challenges related to African dance and Factors and Multiples. For example, students can dance the factors of a given number while others guess the number.
Encourage teamwork and mathematical reasoning as they solve the challenges through dance.

African Dance Showcase:
Have a mini African Dance Showcase where students present their unique dance routines, incorporating Factors and Multiples into their movements. Celebrate their dance creativity and mathematical prowess with applause and cheers!

Conclusion : What an extraordinary African Dance of Numbers experience we had! You've become true Factor and Multiple explorers, unraveling the magic of Factors and Multiples through the spirited beats of African dance. Remember, just like the rhythmic movements in African dance, Factors and Multiples are all around us, forming patterns and structures in our mathematical world. Keep dancing and exploring, young dancers, and let the spirit of African dance inspire your learning journey! Asante sana (thank you very much) for a fantastic dance adventure!

# Unit Opener: Grade 4 Unit 2

## Title: "African Fraction Patterns: Unraveling Fraction Equivalence and Comparison through Traditional Patterns!"

Objective: In this engaging African-centered unit opener, 4th-grade students will immerse themselves in the rich world of Fraction Equivalence and Comparison by exploring traditional African patterns. Through interactive activities, students will deepen their understanding of fractions in the context of African culture and heritage.

Materials Needed:

Pictures or illustrations of African patterns and artifacts
Large chart paper or whiteboard
Markers or colored pencils
Fraction cards or manipulatives (optional)
African-inspired decorations (optional)
African-inspired background music (optional)

Activity Sequence:

Welcome to African Fraction Patterns (2 minutes):
Gather the young learners and introduce them to the African Fraction Patterns! Let them know they will embark on a fascinating journey to explore the magic of Fraction Equivalence and Comparison through traditional African patterns.

Discovering African Patterns (5 minutes):
Show pictures or illustrations of African patterns found in art, textiles, and artifacts. Discuss the significance of patterns in African culture, representing unity and storytelling.
Explain that just like the patterns repeat in African art, fractions can also show repeated parts.

Fraction Equivalence Mosaic:
Divide the students into groups and provide them with large chart paper or whiteboards.
Instruct each group to create a Fraction Equivalence Mosaic using colored pencils or markers. They will draw and represent equivalent fractions through repeating patterns.

Fraction Comparison Gallery
Have each group display their Fraction Equivalence Mosaic on the classroom walls or tables.
Lead the class on a Fraction Comparison Gallery Walk. Students will observe the different patterns and identify equivalent fractions within each mosaic.

African Fraction Art Challenge:
Present fun math challenges related to African patterns and Fraction Equivalence and Comparison. For example, ask students to create a new pattern representing two equivalent fractions they've learned.

Fraction Pattern Connection:
Engage the students in a discussion about the connection between the repeated patterns in African art and the concept of Equivalent Fractions. Encourage them to share their findings and discoveries about patterns and fractions.

Conclusion:
What an extraordinary African Fraction Patterns adventure we had! You've become true Fraction Equivalence and Comparison explorers, unraveling the magic of fractions through the captivating patterns of African art. Remember, just like the repeated patterns in African culture, fractions can be equivalent and show unity. Keep exploring and applying your math knowledge, young pattern artists, and let the beauty of African patterns inspire your learning journey! Asante sana (thank you very much) for a fantastic pattern-filled adventure!

# Unit 3 Opener: Extending Operations to Fractions

## Title: "African Fraction Village: Extending Operations to Fractions in the Vibrant Village Life!"

Objective: In this culturally enriched African-centered unit opener, 4th-grade students will step into the vibrant African village to explore the extension of operations to fractions while immersing themselves in the richness of African culture and community life. Through interactive activities, students will deepen their understanding of fractions while applying operations to solve practical problems.

Materials Needed:

Pictures or illustrations of African village scenes

Large chart paper or whiteboard

Markers or colored pencils

Fraction cards or manipulatives (optional)

African-inspired decorations (optional)

African-inspired background music (optional)

**Activity Sequence**:

Welcome to African Fraction Village:

Gather the young learners and introduce them to the African Fraction Village! Let them know they will journey into the heart of an African village to explore the magic of fractions and apply operations in real-life situations.

Immerse in African Village Life:

Show pictures or illustrations of African village scenes, highlighting daily activities and community life. Discuss the significance of sharing and working together as a community.

Explain that just like the unity in an African village, fractions represent parts of a whole.

Agricultural Practices: Agriculture has been the backbone of many African villages for centuries. Villagers practice various farming techniques, including crop rotation and terraced farming, to sustain their communities and ensure food security.

Fraction Village Market :

Divide the students into small groups and provide them with fraction cards or manipulatives.

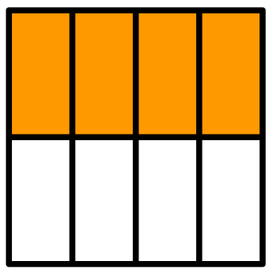
Instruct each group to visit the Fraction Village Market, where they encounter different fractions representing goods and services in the village, such as "1/2 of maize for sale" or "2/3 of the water jugs filled."

African Fraction Operation Board:

Use the large chart paper or whiteboard to create an African Fraction Operation Board. Each group will present their Village Market findings and apply operations (addition, subtraction, multiplication, division) to solve problems related to fractions they encountered.

Fraction Village Problem Solving:

Present practical word problems inspired by African village scenarios and Fraction Operations. For example, "If there are 3 baskets of fruits, and each basket represents 1/4 of the total, how many fruits are there in all?" Encourage students to solve the word problems collaboratively and creatively.



African Fraction Village Showcase:

Have each group showcase their Fraction Village Market experiences and share the solutions to the word problems they solved.

Celebrate their problem-solving skills and cultural exploration with applause and cheers!

Conclusion:

What an extraordinary African Fraction Village adventure we had! You've become true Fraction Explorers, extending operations to fractions while immersing in the vibrant life of an African village. Remember, just like the unity and cooperation in an African community, fractions can be combined and compared to solve real-life problems. Keep exploring and applying your math knowledge, young villagers, and let the spirit of African village life inspire your learning journey! Asante sana (thank you very much) for a fantastic cultural and mathematical adventure!

Grade 4 Unit 3

# Unit 4 Opener: From Hundredths to Hundred-thousands

In this African-inspired Place Value Chart, the numbers are written in Swahili, a widely spoken language in East Africa. Swahili numbers are commonly used across various African countries.
"Mumungu" represents Hundred-Thousands, "Moja" represents Ten-Thousands, "Elfu" represents Thousands, "Mia" represents Hundreds, "Kumi" represents Tens, and "Moja" represents Ones.
Swahili numbers are used as they reflect the cultural diversity and heritage of Africa, making the chart culturally relevant and inspiring for students.
With this African Place Value Chart, students can explore large numbers and deepen their understanding of place value while connecting with the rich linguistic and cultural aspects of Africa. Asante sana (thank you very much) for embracing the African culture in your mathematical journey!

African Place Value Chart

---

Hundred-Thousands | Ten-Thousands | Thousands | Hundreds | Tens | Ones

---

MUMUNGU | MOJA | ELFU | MIA | KUMI | MOJA

# Unit 5 Opener: Multiplicative Comparison and Measurement

## Title: "African Multiplicative Marvels: Exploring Comparison and Measurement with African Magic!"

Objective: In this culturally enriched unit opener, students will embark on an exciting 25-minute journey to explore the wonders of multiplicative comparison and measurement, drawing inspiration from the fascinating world of African traditions and innovations. Through interactive activities inspired by African art, storytelling, and cultural practices, students will deepen their understanding of multiplication, comparison, and measurement in a culturally rich context.

Materials Needed:

Pictures or illustrations of African landscapes, tools, and artifacts

Measurement tools (rulers, measuring tapes, etc.)

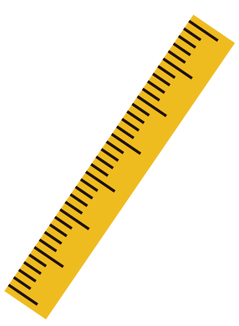
Large chart paper or whiteboard

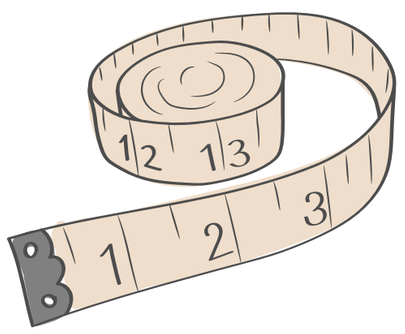
Markers or colored pencils

African-inspired decorations (optional)

African-inspired background music (optional)

African-inspired clothing or accessories (optional)






Activity Sequence:

Welcome to African Multiplicative Marvels :

Gather the students and introduce them to the African Multiplicative Marvels unit! Let them know they will embark on an engaging 25-minute journey to explore the magic of multiplicative comparison and measurement, inspired by the rich traditions and innovations of Africa.

Unraveling African Innovations:

Display pictures or illustrations of African landscapes, tools, and artifacts that demonstrate the innovative use of multiplication and measurement in African cultures.

Engage the students in a lively discussion about how African communities use multiplication and comparison in agriculture, trade, and various aspects of their daily lives.

Measuring with African Precision:
Provide students with measurement tools such as rulers or measuring tapes.
Set up interactive stations representing different African activities, such as measuring the length of traditional African fabrics, the height of African trees, or the distance traveled during a migration.
Guide the students to make measurements and engage in multiplicative comparisons to discover the significance of precision in various African practices.

African Storytelling and Multiplication:
Gather the students in a circle or around a storytelling area.
Share a captivating short story inspired by African folklore or historical events, where multiplication and measurement play essential roles.
Engage the students in the storytelling process, allowing them to make connections between the story and the concepts of multiplication and measurement.

Conclusion (2 minutes):
What an enchanting journey we had with African Multiplicative Marvels! You've become true explorers of multiplication, comparison, and measurement, uncovering the magic hidden in African traditions and innovations. Just like the ingenuity of African cultures, understanding multiplicative comparison and measurement is vital in mathematics and many aspects of our lives. Keep exploring and embracing the beauty of African culture and mathematics, young marvels, and let the wisdom of Africa inspire your mathematical discoveries! Asante sana (thank you very much) for an extraordinary adventure!

**Unit 6 Opener: Multiplying and Dividing Multi-digit Numbers**
**Title: "Mathematical Legacies of African Pioneers: A Journey of Empowerment through Multiplying and Dividing Multi-digit Numbers!"**

Objective: In this interactive and empowering unit opener, students will embark on an exciting journey to explore the wonders of multiplying and dividing multi-digit numbers, while uncovering the rich historical contributions of African and African American mathematicians. Through interactive activities, storytelling, and cultural connections, students will deepen their understanding of multiplication and division in a culturally rich and inspiring context.

Materials Needed:
Pictures or illustrations of African and African American mathematicians
Large chart paper or whiteboard
Markers or colored pencils
African-inspired decorations (optional)
African-inspired background music (optional)
African-inspired clothing or accessories (optional)
Mathematical puzzles related to multiplication and division (optional)

Activity Sequence:
Welcome to Mathematical Legacies:
Gather the students and introduce them to the Mathematical Legacies unit! Let them know they will embark on an interactive and empowering journey to explore the magic of multiplying and dividing multi-digit numbers while celebrating the historical contributions of African and African American mathematicians.

Unraveling the Legacies:
Display pictures or illustrations of African and African American mathematicians who made significant contributions to the field of mathematics.
Engage the students in a lively discussion about the achievements and challenges faced by these remarkable individuals, emphasizing their contributions to multiplication and division concepts.

math

Stories of Empowerment:

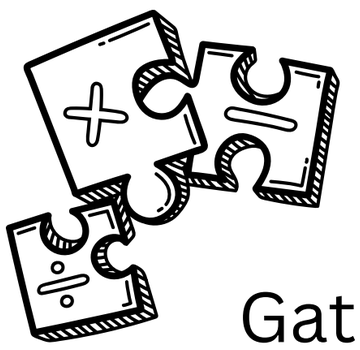
Share inspiring stories about the mathematical accomplishments of African and African American pioneers, such as Benjamin Banneker, Katherine Johnson, and Mary Jackson.

Collaborate with the students to solve mathematical problems related to the achievements of these historical figures, involving multi-digit numbers.

Creative Mathematical Puzzles:

Provide students with interactive mathematical puzzles related to multiplication and division.

Allow them to work in small groups to solve the puzzles, fostering teamwork and critical thinking skills.



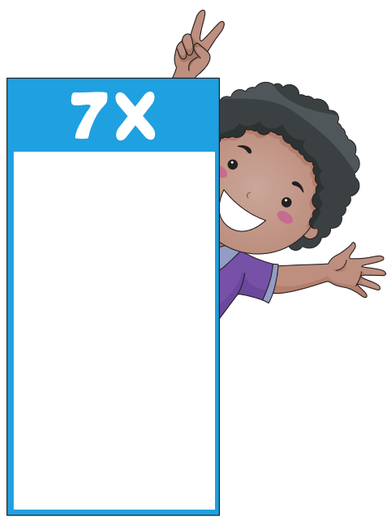
Empowering Reflection:

Gather the students in a circle or around a reflection area.

Lead a discussion on the impact of African and African American mathematicians on the field of mathematics and the importance of representation in STEM fields.

Conclusion:

What an empowering journey we had with Mathematical Legacies! You've become true mathematical explorers, unveiling the magic of multiplying and dividing multi-digit numbers while celebrating the historical contributions of African and African American pioneers. Just like these remarkable individuals, understanding multiplication and division empowers us to pursue our dreams and make a positive impact on the world. Keep exploring and embracing the brilliance of African heritage and mathematics, young minds, and let the achievements of African and African American mathematicians inspire your mathematical discoveries! Asante sana (thank you very much) for an unforgettable and empowering experience!



# Unit 7 Opener: Angles and Angle Measurement

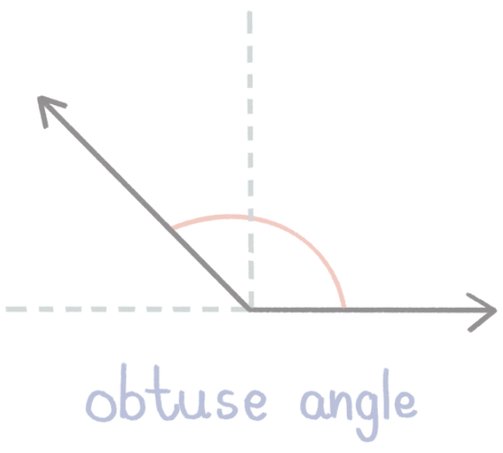
## Title: "African Angle Explorers: Unveiling the Beauty of Angles and Angle Measurement in African Art and Architecture!"

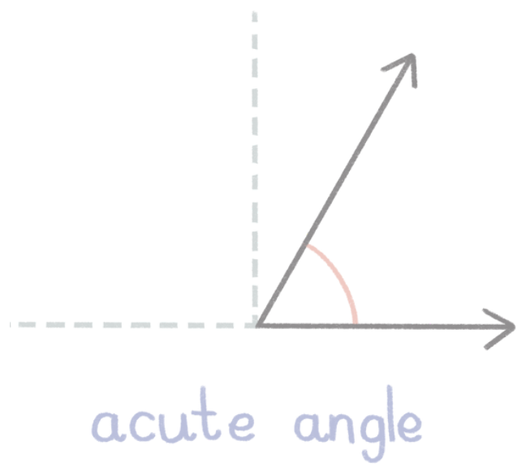
Objective: In this culturally enriched African-centered unit opener, 4th-grade students will embark on a thrilling adventure to explore angles and angle measurement while discovering the significance of angles in African art and architecture. Through interactive activities inspired by the geometric wonders of African designs, students will deepen their understanding of angles and their relevance in culturally rich contexts.

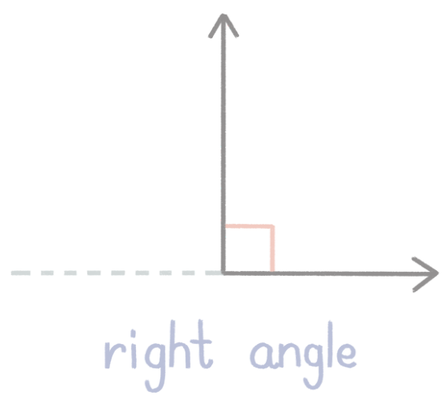
Materials Needed:
Pictures or illustrations of African art and architectural designs
Large chart paper or whiteboard
Protractors (optional)
African-inspired decorations (optional)
African-inspired background music (optional)

Activity Sequence:
Welcome to African Angle Explorers:
Gather the young angle explorers and introduce them to the African Angle Explorers unit! Let them know they will embark on a thrilling adventure to explore the magic of angles and angle measurement through the mesmerizing world of African art and architecture.

Discovering African Geometric Designs :
Display pictures or illustrations of African art and architectural designs, showcasing the geometric wonders and symmetrical patterns. Engage the students in a discussion about the significance of angles in creating these mesmerizing designs.



African Angle Architectural Challenge:
Present an African Angle Architectural Challenge, where students will identify angles in African architectural designs.
Students can use protractors (if available) to measure the angles and discover the geometric principles used in African architecture.

Exploring Angles in African Art :
Show examples of African art that feature angles, such as angular shapes in sculptures or paintings.
Encourage students to identify and discuss the types of angles present in the artworks.

Angle Measurement in African Artifacts:
Provide pictures or illustrations of African artifacts, such as masks or textiles, featuring angular designs.
Students will estimate and measure angles found in these artifacts, connecting angle measurement to the cultural expressions of African heritage.

Conclusion:
What an extraordinary African Angle Explorers adventure we had! You've become true explorers, unveiling the beauty of angles and angle measurement in the geometric wonders of African art and architecture. Remember, just like the symmetry and precision in African designs, angles play a vital role in creating balance and harmony in mathematics. Keep exploring and applying your knowledge of angles, young explorers, and let the wonders of African art and architecture inspire your learning journey! Asante sana (thank you very much) for a fantastic geometric and cultural adventure!