



Measure in Meters

Standards

Addressing 2.MD.A.1, 2.MD.A.3, 2.NBT.A.2
 Building Toward 2.MD.A.2

Instructional Routines

- Choral Count

Goals

- Compare and contrast (orally) measurements made with different tools or expressed in different units.
- Comprehend (in spoken and written language) the meaning of the term “meter.”
- Use rulers and meter sticks to measure length in centimeters and meters.

Student Facing Learning Goals

- Let's measure lengths in meters.

Lesson Purpose

The purpose of this lesson is for students to learn that the **meter** is a larger unit of metric length measurement.

Narrative

In previous lessons, students measured and estimated varied lengths in centimeters. They measured using centimeter cubes and centimeter rulers.

In this lesson, students measure longer lengths and identify the need for a more appropriate length unit and tool for these measurements. Students use meter sticks to measure strips of tape on the floor, which represent the measurements of a variety of reptiles. Students recognize that a meter stick makes measuring longer lengths easier.

Access for Students with Disabilities

- Engagement

Access for English Learners

- MLR2

Required Materials

Materials to Gather

- Base-ten blocks: Activity 1
- Rulers (centimeters): Activity 1, Activity 2
- Tape (painter's or masking): Activity 1
- Meter sticks: Activity 2

Lesson Timeline

Warm-up 10 min

Teacher Reflection Questions

Reflect on who participated in math class today. What



Activity 1	20 min
Activity 2	15 min
Synthesis Estimate	10 min
Cool-down	5 min

assumptions are you making about those who did not participate? How can you leverage each of your students' ideas to support them in being seen and heard in tomorrow's math class?

Warm-up

 10 min

Choral Count: Beyond 100

Standards

Addressing 2.NBT.A.2

Instructional Routines

- Choral Count

The purpose of this *Choral Count* is to invite students to practice counting by 1 beyond 120 and notice patterns in the count. These understandings help students develop fluency and will be helpful later in this lesson when students need to use centimeters and meters to record lengths. For example, some students may record 1 meter and 30 centimeters as 130 centimeters.

Students may wonder about the place value of three-digit numbers. Although students are not expected to understand the hundreds place yet, be prepared to say that the 1 means 1 hundred without going too far. Unitizing 100 will be addressed in a later unit.

Student Response

Record the count from 20 to 30 in one row. Record the count from 120 to 130 directly below the first count.

Sample responses:

- The numbers are the same in the second row except there's a 1 in front.
- The second row of numbers has 3 digits instead of 2.
- Each number is 100 more than the number above it.

Launch

- "Count by 1, starting at 20."
- Record as students count.
- Stop counting and recording at 30.
- "Count by 1, starting at 120."
- Record as students count directly below the first count.
- Stop counting and recording at 130.

Activity

- "What patterns do you see?"
- 1–2 minutes: quiet think time
- Record responses.

Activity Synthesis

- "Who can restate the pattern in different words?"
- "Does anyone want to add an observation on why that pattern is happening here?"
- "Do you agree or disagree? Why?"



Activity 1

🕒 20 min

Reptiles to Measure

Standards

Addressing 2.MD.A.1

The purpose of this activity is for students to experience the need for a longer length unit and measuring tool. Students practice measuring the lengths of reptiles that are represented by lengths of tape. During the activity, students measure a length of tape that is 1 meter and 80 centimeters long. They can choose to measure with centimeter cubes, 10-centimeter tools, their self-made rulers, or centimeter rulers (MP5). The *Synthesis* focuses on discussing why measuring longer lengths is difficult with the tools they have. Students consider how longer tools or longer length units would help their measurement challenges. Students measure tape strips A–D in this activity.

Required Materials

Materials to Gather

- Base-ten blocks: Activity 1
- Rulers (centimeters): Activity 1
- Tape (painter's or masking): Activity 1

Required Preparation

- Tape strips of these lengths on the floor. Label each strip with the letter and the name of the reptile. (It may be helpful to make multiple sets of the strips to keep the groups small.)
 - Tape A, Gila monster: 58 cm
 - Tape B, baby alligator: 72 cm
 - Tape C, baby cobra: 44 cm
 - Tape D, Komodo dragon: 180 cm
 - Tape E, adult alligator: 3 meters and 36 cm
 - Tape F, adult cobra: 1 meter and 90 cm
 - Tape G, ribbon snake: 2 meters and 82 cm

Student Task Statement

The tape pieces on the floor represent the lengths of each reptile.


1. Measure each reptile. Write the unit.
 - a. What is the length of the Gila monster?

A: Gila monster



Launch

- Groups of 3–4
- Give students access to centimeter rulers and base-ten blocks.
- Display the reptile images.
- “In previous lessons, we measured different kinds of smaller reptiles. What do you know about some of these larger reptiles?”
- “Let’s imagine we are zookeepers who need to measure the lengths of these reptiles.”

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- b. What is the length of the baby alligator?
 - c. What is the length of the baby cobra?
 - d. What is the length of the Komodo dragon?

B: baby alligator



C: baby cobra



D: Komodo dragon



- “Some of these reptiles would be too dangerous to bring in the classroom to measure. I’ve placed strips of tape on the floor to represent their lengths.”
- “Look at the strips of tape on the floor. Choose anything we’ve used so far to measure each of the strips A through D with your group. You can use centimeter cubes, 10-centimeter tools, the rulers you made, or the centimeter rulers.”

Activity

- “Record the length of these four reptiles in centimeters.”
- 10 minutes: small-group work time
- Monitor for different ways students use their tools to measure the Komodo dragon:
 - Iterating 10-centimeter tools.
 - Iterating rulers.
 - Iterating a combination of tools.

Student Response

1.
 - a. 58 cm
 - b. 72 cm
 - c. 44 cm
 - d. 180 cm

Activity Synthesis

- “Which measuring tool did you choose to use? Why?” (We used the 10-centimeter tools and cubes because they were easier to count tens and ones. We used the rulers because we didn’t have to use as many blocks. It was faster.)
- Invite previously identified students to share how they measured the Komodo dragon and calculated its length.
- “What was challenging about measuring longer lengths in centimeters?” (We had to line up our tools and count the centimeters. Centimeters are small so there were a lot of them to count.)
- “Would you want to use these tools to measure real large reptiles?” (No. It would take too long. I might get bit.)
- “What would make measuring longer lengths easier?” (We could use a tool that has more centimeters on it. We could use a longer length unit to measure.)

Advancing Student Thinking

If students use centimeter cubes or 10-centimeter tools to measure all of the tape strips including the length of the Komodo dragon, consider asking:

- “Can you show me how you measured the __?”



- “How could you use your rulers to find the same measurement?”

Activity 2

🕒 15 min

Measure with a Meter Stick

📖 Standards

Addressing 2.MD.A.1

Building Toward 2.MD.A.2

The purpose of this activity is for students to learn about the meter as a longer metric unit of length. Students measure longer lengths with a new tool, the meter stick. Students measure strips of tape of different lengths and choose between a centimeter ruler and a meter stick in order to measure each. In the *Synthesis*, students share their measurements of each line and discuss how they chose which tool to use to measure (MP5). Students measure Strips D–G in this activity. Students measure the Komodo dragon (Strip D) twice to experience measuring the same length with a ruler and a meter stick. They discuss and compare their measurements in the *Lesson Synthesis*.

🌐 Access for English Language Learners

- | *MLR2 Collect and Display*. Direct attention to words collected and displayed from the previous lesson. Add “meter stick” to the collection. Invite students to borrow language from the display as needed, and update it throughout the lesson. *Advances: Conversing, Reading*

♿ Access for Students with Disabilities

- | *Engagement: Provide Access by Recruiting Interest*. *Synthesis*: Optimize meaning and value. Invite students to share people they know or specific jobs they recognize that may use the measuring tools they have been exposed to. “When and why might someone use these measuring tools?” *Supports accessibility for: Conceptual Processing*

Required Materials

Materials to Gather

- Meter sticks: Activity 2
- Rulers (centimeters): Activity 2

👤 Student Task Statement

1. Measure the length of the Komodo dragon in meters.
2. Compare your Komodo dragon measurements in the first activity to the measurements in the second activity. How are they alike? How are they different?
3. Measure each reptile in centimeters or meters.

D: Komodo dragon



Launch

- Groups of 3–4
- Give each group a meter stick.
- “We saw that measuring longer lengths with centimeters can be challenging. Luckily, there is a standard unit that is much larger than a centimeter that we can use. It’s called a **meter**.”
- Show students a meter stick.
- “This is called a meter stick. The length of one end to



Write the units.

a. How long is the adult alligator?

E: adult alligator



b. How long is the adult cobra?

F: adult cobra



c. How long is the ribbon snake?

G: ribbon snake



the other is 1 meter long. Just like we used centimeter cubes at first to measure centimeters. We can use the length of a meter stick to measure length in meters."

- "What do you notice about the meter stick?" (There are lots of little lines. The numbers go up to 100. Every tenth number is bold.)
- 30 seconds: quiet think time
- Share responses.
- "The meter stick makes it easier to measure longer lengths. We can use the meter stick to measure in meters or centimeters."
- "Find 50 cm on the meter stick."
- If time permits, find a few other markings.

Student Response

1. about 2 meters or 1 meter and 80 centimeters
2. Sample response: It was easier to use the meter stick because we just used it twice, but we used the centimeter ruler a lot of times. I can see that the meter stick is 100 cm.
3.
 - a. about 3 meters, 335 centimeters, or 3 meters and 36 cm
 - b. about 1 meter, 90 cm
 - c. about 3 meters, 282 centimeters, or 2 meters and 82 cm

Activity

- "Now, let's go back to our job as zookeepers and measure some even larger reptiles."
- "You are going to measure the Komodo dragon again and 3 new reptiles."
- "You may use any of the measuring tools you have used today. Be prepared to explain why you chose each tool."
- 12 minutes: group work time
- Monitor for the different ways students measure the ribbon snake and adult alligator including how they record their measurements in meters.

Activity Synthesis

- "Which tools did you use to measure Strip G, the ribbon snake? Why did you choose this tool?" (We used the meter stick and took away 10, because it was so close.)
- "What did you do when you found that Strip E, the adult alligator, was longer than 3 meters but shorter than 4 meters?" (We saw it was closer to 3 meters so we said it was about 3 meters. We used the meter stick 3 times and then the cm ruler for the rest.)

Advancing Student Thinking

If students do not measure using the meter stick, or only report their measurements in centimeters, consider asking:

- "About how many meters long is the ___?"



- “What is different about measuring the __ in meters (or meters and centimeters) rather than only centimeters?”

Lesson Synthesis

“Today, we learned about another standard unit of length—the meter. We used meter sticks to make measuring longer lengths a lot easier.”

“You measured the length of the Komodo dragon two times. How were your measurements alike? How were your measurements different?” (When we measured the length in meters, it was only about 2 meters. When we measured the length in centimeters, it was 180 centimeters. We only had to use the meter stick 2 times to measure the whole length. We had to use the ruler lots of times.)

Display the meter stick.

“What did you like about using the meter stick? When do you think it is helpful to use a meter stick to measure instead of a ruler or other tools?” (I liked using it for longer lengths because you didn’t need as many tools or you didn’t need to move the tool a bunch of times. It’d be good to use to measure longer things. If you were measuring meters you would want to use it.)

Suggested Centers

- Target Numbers (1–5), Stage 5: Subtract Two-Digit Numbers (Addressing)
- Five in a Row: Addition and Subtraction (1–3) , Stage 6: Add within 100, with Composing (Supporting)

Cool-down


 5 min

Measure in Meters

Standards

Addressing 2.MD.A.1, 2.MD.A.3

Student Task Statement

 Noah held a gecko at the zoo. The length of the gecko fit in his hands. He measured it and said it was about 13 meters long.

Do you think his measurement is correct? Why or why not?

Student Response

Sample responses:

- No, that would be way too long. I think he means 13 centimeters, not meters.
- If it fit in his hands it couldn’t be 13 meters. 1 meter is way longer than his hands.

Responding to Student Thinking

Students agree with Noah that 13 meters is a reasonable

Next Day Supports



measurement for the gecko.

Launch Activity 1 with a discussion about this *Cool-down*.

