

Measurement Olympics

Adapted from:

GRADE 1 • UNIT 4: Sorting, Comparing, and Ordering

Georgia Department of Education

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Approximately 2 days

STANDARDS FOR MATHEMATICAL CONTENT

MCC.1.MD.1 Order three objects by length; compare the lengths of two objects indirectly by using a third object.

MCC.1.MD.2 Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. *Limit to contexts where the object being measured is spanned by a whole number of length units with no gaps or overlaps.*

MCC.1.MD.4 Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.

STANDARDS FOR MATHEMATICAL PRACTICE

1. Make sense of problems and persevere in solving them.

2. Reason abstractly and quantitatively. Students analyze data on charts to make comparisons.

3. Construct viable arguments and critique the reasoning of others.

4. Model with mathematics.

5. Use appropriate tools strategically. Students use tools to measure activities in this task.

6. Attend to precision. Students participate in a class discussion about the data collected in this task.

7. Look for and make use of structure.

8. Look for and express regularity in repeated reasoning.

BACKGROUND KNOWLEDGE/COMMON MISCONCEPTIONS

Students should have a variety of experiences with measuring objects with units prior to this activity. Remind students that when using objects, each object should be placed end to end without overlapping or gaps.

ESSENTIAL QUESTIONS

- How are units used to measure objects?
- How are measuring units selected?
- How is estimation helpful in measurement?
- How do measurements help compare objects?

MATERIALS

Olympic Event Recording sheet

Olympic Event Charts

Olympic Event Task Cards

Cotton Balls

Paper worms

Ladybug centimeter ruler

Broken ruler tool (from previous lesson)

GROUPING

Individual

TASK DESCRIPTION, DEVELOPMENT, AND DISCUSSION

Task 1

Review with the students the importance of using appropriate tools to measure objects. Review with students the various measuring tools they made or used during previous lessons. Lead a discussion that prepares students to make a decision about which measuring tool they will use for each event.

Each of the “Olympic Events” will allow the students to demonstrate their mastery of the measurement standards. The tasks and activities will be grouped as “Events.” Students will rotate to all four of the Olympic events. Have students record their data on the Olympic Event recording sheets.

The teacher should arrange the events with enough room for students to complete the event with safety and accuracy. The teacher should model each event so that students are aware of the expectation of each event. The events could be implemented using small group rotations.

Preparation: cut apart inch worms, get out student made broken ruler tool, cut apart foot prints, *leave lady bug centimeter ruler whole* (supplies attached at the end of this document)

Olympic Event Descriptions:

Event #1 – Wiggle Worms

The students will measure the length of their desk using inch worms.

Event #2 – Feather Blow

The students will blow a feather and measure the distance the feather travels, with the broken ruler tool.

Event #3– Long Jump

The students will measure their longest jump using the footprint tool.

Event #4 – Cotton Ball Throw

The students will measure the distance they can throw a cotton ball using the ladybug centimeter ruler.

Event #5 Events of the Day

The students will sequence a series of events, and assign a time of day which makes sense to them, to each event. They will justify their reasoning by writing an explanation for each time and selected event.

Task 2

The teacher will post 4 pieces of chart paper at the front of the room for students to record their results. (*Sample charts below*) Students will record their Olympic Event data on a class charts at the front of the room.

<i>Wiggle Worms</i>	
Student Name	# of Worms

<i>Feather Blow</i>	
Student Name	# units

<i>Long Jump</i>	
Boys	Girls

<i>Cotton Ball Throw</i>	
Boys	Girls

Task 3

Gather students to a common area. The teacher will lead a discussion about each event. Allow students to compare results within each event.

FORMATIVE ASSESSMENT QUESTIONS

- What do you notice about the results from each event?

Looking at the long jump results, I noticed that the boys jumped longer than the girls.

- How do you know that your measurements are accurate?
- Is there anything that you would change about the way you measured the objects?
- Would you have selected a different measuring tool at any of the events? Why?
- What do the events all have in common?
- Which event do you think our class would do best in at the real Olympics?

Name _____ Date: _____

Olympic Event Recording Sheet



Event Name	Measurement Estimate	Actual Measurement
Wiggle Worms		
Feather Blow		
Long Jump		
Cotton Ball Throw		

Which event was your best event? Why? _____

Which event was your worst event? Why? _____

Event 1: Wiggle Worms

- Estimate how many inchworms it will take to measure your desk across the top. Record your estimate on the sheet.
- Lay the inchworms in a straight line across your desk. Count the number of inchworms you used and record on your sheet.



Event 2: Feather Blow

- Estimate how many units it will take to measure your desk across the top. Record your estimate on the worksheet.
- Put a feather at the edge of a table. Use this as the starting line. Blow the feather as far as you can.
- Mark the distance where the feather lands. Then measure the distance between the edge of the table and where your feather landed using unused units on the broken ruler. Record on your sheet.



Event 3: Long Jump

-Estimate how many footprints it will take to measure as far you can jump.

Record your estimate on the sheet.

- Use a piece of tape as a starting line. Stand with heels on tape. Jump the longest jump possible.



-Using the footprint tool, measure your jump and record the results.

Event 4: Cotton Ball Throw

- Estimate how many centimeter ladybugs it will take to measure how far you can throw a cotton ball. Record your estimate on the recording sheet.

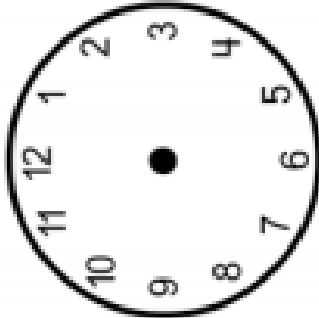
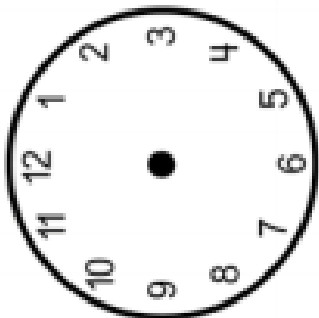
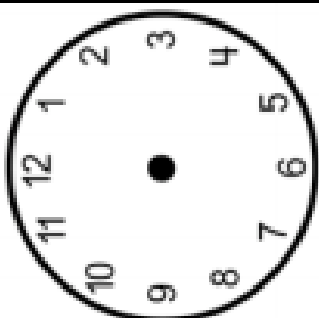
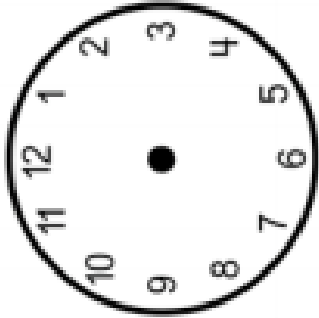
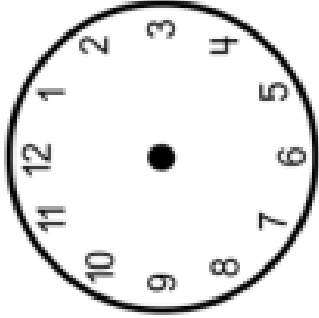


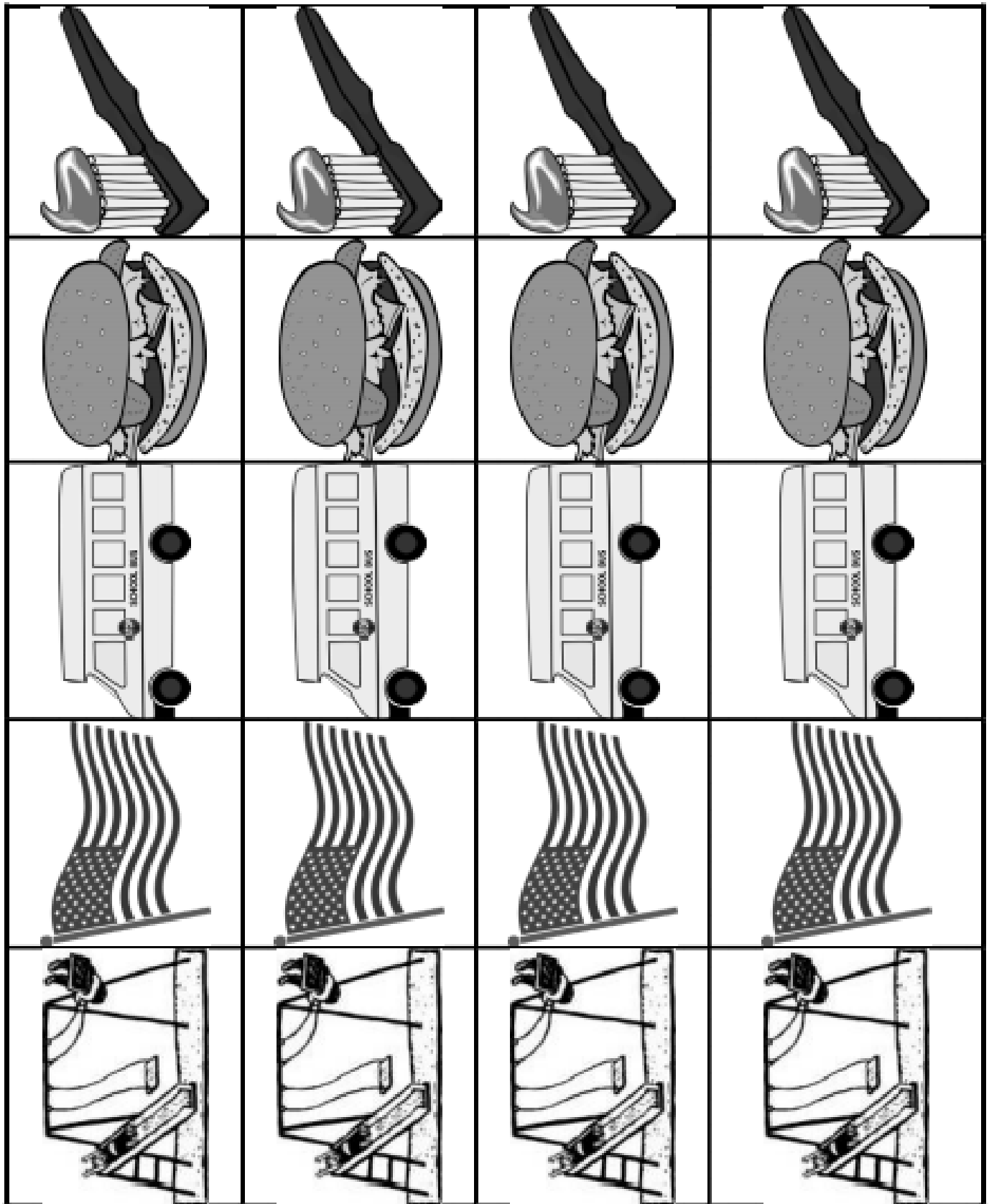
-Stand at the tape line on the floor. With one hand throw the cotton ball as far as you can.-Using the centimeter ladybug tool, measure the distance that the cotton ball traveled. Record the results.

Event 5: Events of the Day



- Cut out each of the pictures and glue them to the task sheet under a clock.
- Write the time on an analog clock and a digital clock that you would participate in the activity during the day, for each event.
- Write an explanation that justifies your reasoning for assigning the time you chose for the each activity.

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Scoring Guide for Measurement Olympics (Task 1)

	Solution	Notes
Meeting	<ul style="list-style-type: none"> • Reasonable estimate for event 1 • Accurately measured in event 1 • Reasonable estimate for event 2 • Accurately measured in event 2 • Reasonable estimate for event 3 • Accurately measured in event 3 • Reasonable estimate for event 4 • Accurately measured in event 4 • Reasonably sequenced activities in event 5 • Explained their reasoning for the sequence • Reasonably assigned times for activities in event 5 • Explained their reasoning for assigning times 	
Developing	Meets 9 out of 12 from the proficient category.	
Beginning	<p>Meets fewer than 9 of the proficient category.</p> <p>Task needs to be repeated after re-teaching</p> <p>Comments:</p>	

