

Science Museum Day

Teacher Guide · Solutions · Rubric

Grade 3 · All levels

Overview

Students plan a day at a science museum. They read clocks, build a schedule with elapsed time, and at the lab station measure and solve problems with liters, grams and kilograms.

Time: 2 class periods · **Product:** Museum Day Schedule and Lab Sheet
Standards: 3.MD.A.1, 3.MD.A.2
Prerequisite skills: Telling time to 5 minutes (Grade 2); Adding and subtracting within 100

Learning targets

- I can tell and write time to the nearest minute.
- I can find elapsed time, start times and end times in minutes.
- I can measure and solve one-step problems with liters, grams and kilograms.

Timing and materials

- Day 1 (45 min): clocks and the schedule (Parts 1–2) with open number lines.
- Day 2 (45 min): the water and mass lab (Part 3) and the final schedule.

Materials: Demonstration clock or paper clocks; Containers marked in liters (or the printable beaker page); Balance scale and gram weights (optional); Pencils. No accounts, paid products or student personal information are needed.



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The three versions

- Remedial: hints for a first step, partly filled tables, sentence frames and fewer open choices; the same learning targets.
- Standard: the full task set at grade level; students choose their strategies and models.
- Advanced: open design constraints, missing information, error analysis and a written justification; no hints.

All versions use the same context and learning targets, so groups can share and compare work.

Implementation notes

- Model elapsed time on an open number line: jump to the next hour first.
- Have students read the scale value of one mark before reading any measurement.
- Advanced students fit activities into a fixed time block and fix a schedule with an error.
- Before Part 1, read the challenge aloud and ask students to restate the goal.
- Close with a gallery walk: each group explains one strategy.

Rubric

Learning target	4 Exceeds	3 Meets	2 Approaching	1 Beginning
I can tell and write time to the nearest minute.	Correct and complete; explains how	Mostly correct	Partly correct	Not yet
I can find elapsed time, start times and end times in minutes.	Correct and complete; explains how	Mostly correct	Partly correct	Not yet
I can measure and solve one-step problems with liters, grams and kilograms.	Correct and complete; explains how	Mostly correct	Partly correct	Not yet
I can explain my thinking with pictures, numbers and words.	Clear for every part	Clear for most parts	Some explanation	Little explanation
My museum day schedule and lab sheet is complete and matches my math.	Complete, neat, accurate	Complete	Partly complete	Not complete



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Solutions · Remedial KEY

Part 1: Clock Check

The bus arrives at the museum. The clock shows 9:10.

1. Where is the hour hand? Where is the minute hand?
Hour hand just past the 9; minute hand on the 2.

2. How many minutes until 10:00?
50 minutes

Part 2: Build the Schedule

Fill in the end time of each activity. Each one starts when the one before it ends.

Activity	Start	Minutes	End
Dinosaur Hall	9:10	30	9:40
Space Show	9:40	20	

3. What time does the last activity end?
10:00

4. How many minutes do all the activities take?
50 minutes



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Part 3: Water and Mass Lab

At the lab, you measure water and weigh rocks.

5. You pour 3 buckets of 4 liters into a tank. How many liters is that?
12 liters

6. A rock is 350 grams. A crystal is 125 grams. How many more grams is the rock?
225 grams

7. Would you measure a backpack in grams or kilograms?
kilograms

Extension

A movie at the museum starts at 1:45 and lasts 50 minutes. When does it end?
2:35



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Solutions · Standard KEY

Part 1: Clock Check

The bus arrives at the museum. The clock shows 9:15.

1. Where is the hour hand? Where is the minute hand?
Hour hand just past the 9; minute hand on the 3.

2. How many minutes until 10:00?
45 minutes

Part 2: Build the Schedule

Fill in the end time of each activity. Each one starts when the one before it ends.

Activity	Start	Minutes	End
Dinosaur Hall	9:15	35	
Space Show	9:50	25	
Lunch	10:15	40	

3. What time does the last activity end?
10:55

4. How many minutes do all the activities take?
100 minutes



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Part 3: Water and Mass Lab

At the lab, you measure water and weigh rocks.

5. A tank holds 18 liters. You pour in 3 buckets of 4 liters. How many more liters fill the tank?

6 liters

6. A rock is 350 grams. A crystal is 125 grams. How many more grams is the rock?

225 grams

7. Would you measure a backpack in grams or kilograms?

kilograms

Extension

A movie at the museum starts at 1:45 and lasts 50 minutes. When does it end?

2:35



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Solutions · Advanced KEY

Part 1: Clock Check

The bus arrives at the museum. The clock shows 9:05.

1. Where is the hour hand? Where is the minute hand?
Hour hand just past the 9; minute hand on the 1.

2. How many minutes until 10:00?
55 minutes

Part 2: Build the Schedule

Fill in the end time of each activity. Each one starts when the one before it ends.

Activity	Start	Minutes	End
Dinosaur Hall	9:05	45	
Space Show	9:50	35	
Lunch	10:25	40	

3. What time does the last activity end?
11:05

4. How many minutes do all the activities take?
120 minutes



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Part 3: Water and Mass Lab

At the lab, you measure water and weigh rocks.

5. A tank holds 18 liters. You pour in 3 buckets of 4 liters. How many more liters fill the tank?

6 liters

6. A rock is 350 grams. A crystal is 125 grams. How many more grams is the rock?

225 grams

7. Would you measure a backpack in grams or kilograms?

kilograms

Part 4: Fix the Schedule

The bus leaves at 12:30.

8. The last activity ends at 11:05. How many minutes are left before the bus leaves?

85 minutes

9. Add a 25-minute Robot Lab. Does it fit? Explain.

Yes. 85 minutes are left, and 25 < 85.

Extension

A movie at the museum starts at 1:45 and lasts 50 minutes. When does it end?

2:35