



Telling time on the railroad

Standard Time

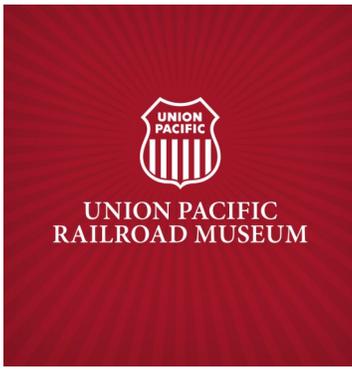
In the 19th Century, time was a local matter. Most people depended on the position of the sun to set their clocks, causing time to vary from town to town. But with the building of the railroads came a great need for precision that a “standardized” time would provide. For the system to work, all engineers had to agree on the precise time of day. In 1883 railroads in the United States and Canada implemented a system of times and time zones. Railroad standard time gradually spread to use in communities, but it wasn’t until 1918 that Congress passed the Standard Time Act, finally adopting the time zones established by the railroads.



Telling Time Activities

The following activities can be used with the commemorative Union Pacific Railroad Museum standard time board, or any other multiple clock learning tool with moveable hands. Needed additional materials will be listed. The activities can be used as a classroom, small group, or one on one instruction. Activities can be modified to be used for learning to tell time at multiple levels.

National Standards: *1st Grade: (1.MD.3.) Tell and write time in hours and half-hours using analog and digital clocks. 2nd Grade: (2.MD.7.) Tell and write time from analog and digital clocks to the nearest five minutes. 3rd Grade: (3.MD.1.) Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes. 4th Grade: (4.MD.1.) Know relative sizes of measurement units within one system of units such as hour, minute, second. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. (4.MD.2.) Use the four operations to solve word problems involving intervals of time and problems that require expressing measurements given in a larger unit in terms of a smaller unit. 5th Grade: (5.MD.1.) Convert among different-sized standard measurement units within a given measurement system (hour, minute, and second), and use these conversions in solving multi-step, real world problems.*



Telling time on the railroad

Kindergarten & 1st Grade

Activity 1: “Telling Time – Hour Hand and Minute Hand”

Materials: use “Telling Time – Hour Hand and Minute Hand” worksheet and crayons or colored pencils

- Students will identify the hour hand and the minute hand on a clock face

Activity 2: “Writing Time to the Hour”

Materials: use “Writing Time to the Hour” worksheet

- Students will demonstrate telling time to the hour either by saying or writing the correct time
- or-
- Students will set the clock to the hour the teacher determines.

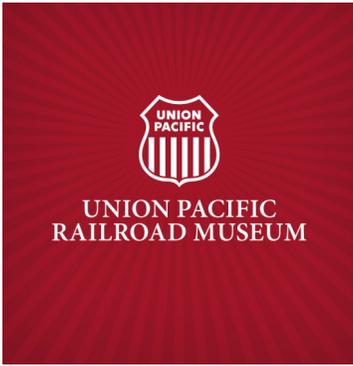


Game Idea:

Materials: dice (both 1-6 and 7-12 markings)

- Students will take turns rolling the dice and setting the clock to that hour.

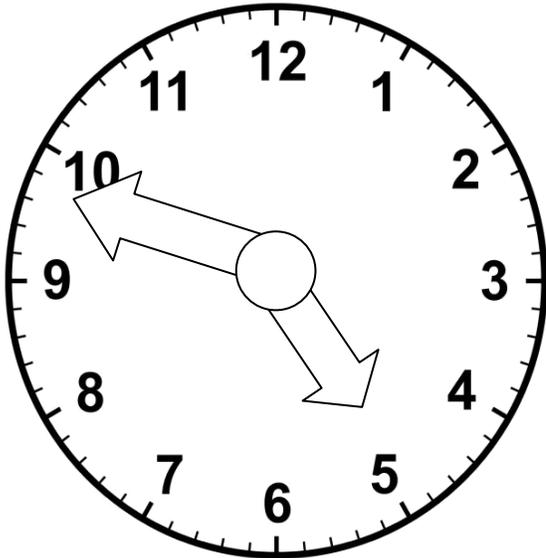
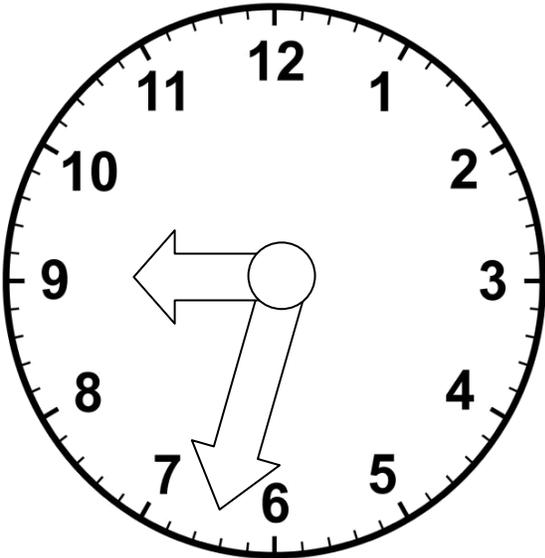
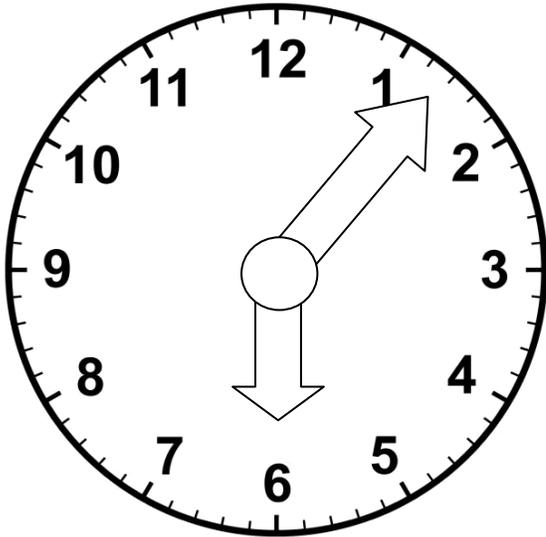
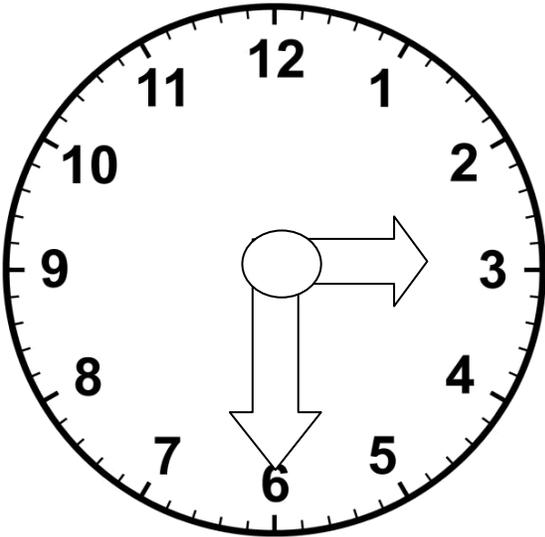
For example: If the student rolls a 3, set the clock to 3:00

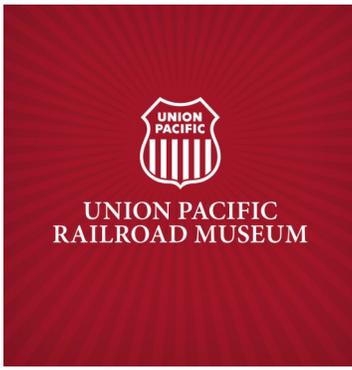


Telling time on the railroad

Telling time: Hour and Minute Hand

Color the hour hand yellow and the minute hand red.





Telling time on the railroad

Writing Time to the Hour

Writing Time to the Hour

1. _____ o'clock

9. _____ o'clock

2. _____ o'clock

10. _____ o'clock

3. _____ o'clock

11. _____ o'clock

4. _____ o'clock

12. _____ o'clock

5. _____ o'clock

13. _____ o'clock

6. _____ o'clock

14. _____ o'clock

7. _____ o'clock

15. _____ o'clock

8. _____ o'clock



Telling time on the railroad

1st - 3rd Grade

Activity 3: Writing time from an analog clock to a digital form

1st Grade – 2nd Grade

A. Materials: use “Telling Time - Digital Worksheet” *

**Hint – using a clear page protector over a copied form will create a dry erase surface for students.*

- Students will write the time displayed on the analog clocks in digital form or
- B. Materials: use “Drawing Clock Hands and Writing Digital Time” worksheet
- Students will draw hands on the analog clock and write the digital time to match
NOTE: Students need to know the hour is written on the left of the colon while the minutes are written on the right side of the colon before doing this activity

Activity 4: Telling Time in 5 Minute Intervals

2nd Grade – 3rd Grade

Materials: use the Standard Time board from UPRR Museum or other time zone teaching devices.

- The teacher will set each clock to different times incorporating 5 min intervals.
- Students will be asked to identify which clock is set to the requested time.

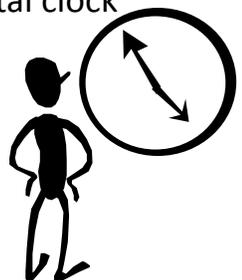
TIP: Include confusing times such as 3:50 and 10:15 where students need to distinguish between the hour and minute hands.

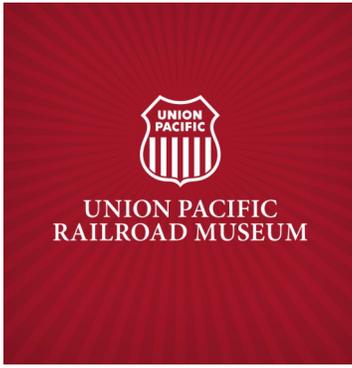
This activity would also work with verbal requests or writing the time in digital form on the board and students picking the correct analog clock.

Activity 5: Telling Time Analog-Digital

Materials: use “Telling Time Analog-Digital” worksheet

- The teacher will set a clock and ask the students to circle the correct digital clock for the same time.





Telling time on the railroad

Telling Time: Digital

Look at the analog clock and write the correct digital time.

1. _____ : _____

11. _____ : _____

2. _____ : _____

12. _____ : _____

3. _____ : _____

13. _____ : _____

4. _____ : _____

14. _____ : _____

5. _____ : _____

15. _____ : _____

6. _____ : _____

16. _____ : _____

7. _____ : _____

17. _____ : _____

8. _____ : _____

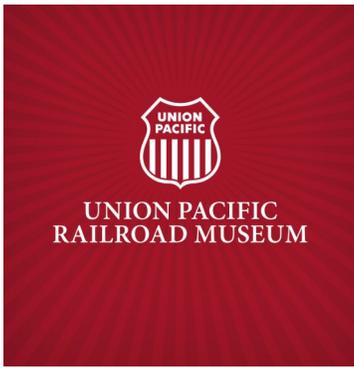
18. _____ : _____

9. _____ : _____

19. _____ : _____

10. _____ : _____

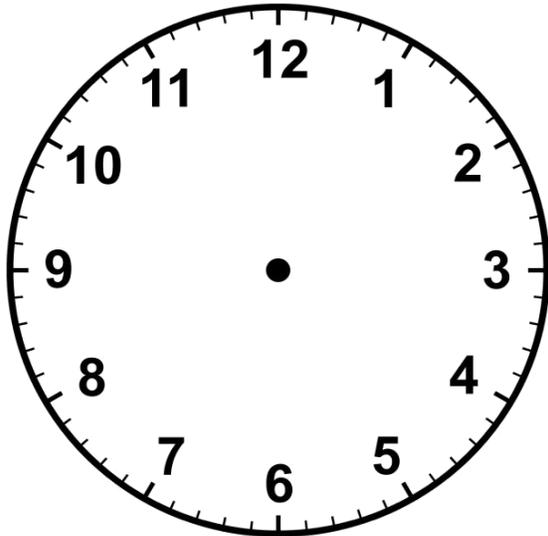
20. _____ : _____



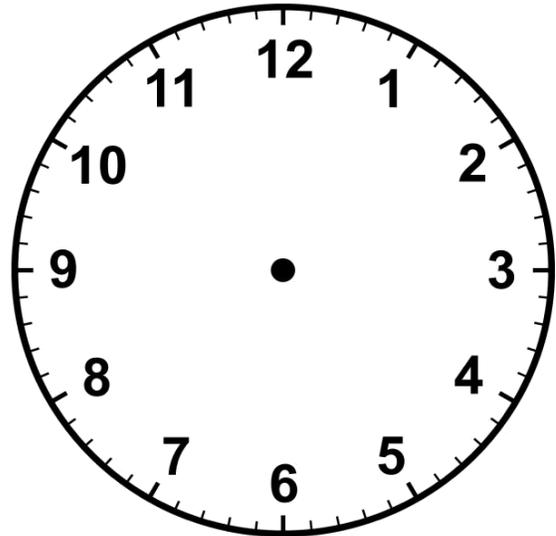
Telling time on the railroad

Drawing Clock Hands and Writing Digital Time

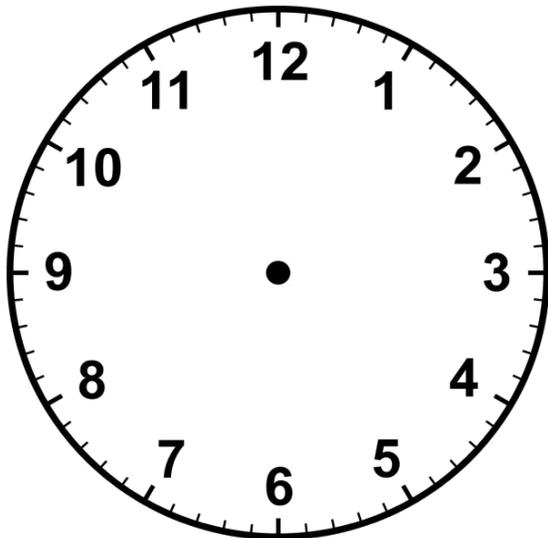
Draw the hands on the analog clock. Then write the digital time to match.



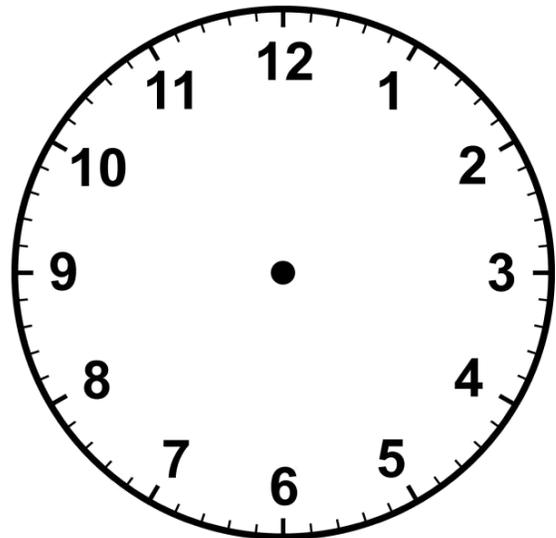
_____ : _____



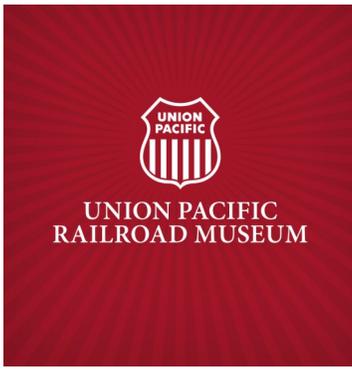
_____ : _____



_____ : _____



_____ : _____

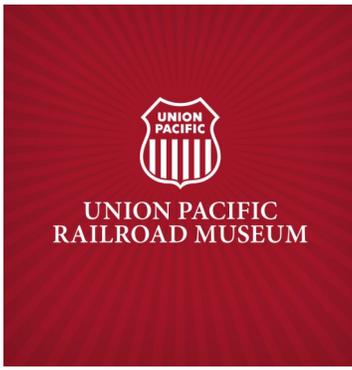


Telling time on the railroad

Telling Time: Analog-Digital

Which Digital Clock shows the same time as the time on the Analog Clock?

- | | | | |
|----|-------|------|-------|
| 1. | 3:45 | 3:15 | 9:15 |
| 2. | 6:25 | 5:30 | 6:30 |
| 3. | 1:15 | 1:25 | 1:45 |
| 4. | 10:40 | 8:50 | 9:50 |
| 5. | 2:00 | 4:00 | 12:20 |
| 6. | 7:25 | 6:25 | 8:25 |
| 7. | 12:30 | 6:00 | 7:30 |



Telling time on the railroad

3rd - 5th Grade

Activity 6: Using a Schedule to identify time

3rd – 4th Grade

Materials: Classroom schedule for each student and notebook paper

- The teacher will set a clock; students look at the schedule then tell what activity happens at that time of the day and write the activity on notebook paper.



Game Idea:

Materials: Have students make a Tic-tac-toe grid or Bingo grid with times from the schedule. The teacher calls an activity (such as Music, Lunch, PE) and students cover the clock or digital time that matches that particular activity.

Activity 7: Matching Analog Time with Time Written in Words

3rd - 4th Grade

Materials: "Writing out Time" worksheet

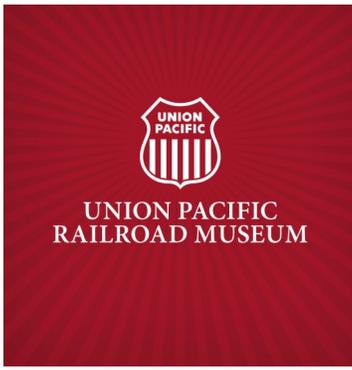
- teacher sets the clock face and students choose the correct time expressed in words
- when students become proficient writing time in words, this activity can be completed with students creating the written descriptions on notebook paper

Activity 8: Elapsed Time

4th – 5th Grade

Materials: use the Standard Time board from UPRR Museum or other time zone teaching devices.

- the teacher will set the first clock and then ask a student to set the next clock at a certain elapsed time. E.g.: Set the first clock for 4:25 and ask a student to set the next clock 1 hour and 10 minutes later.



Telling time on the railroad

Writing Time

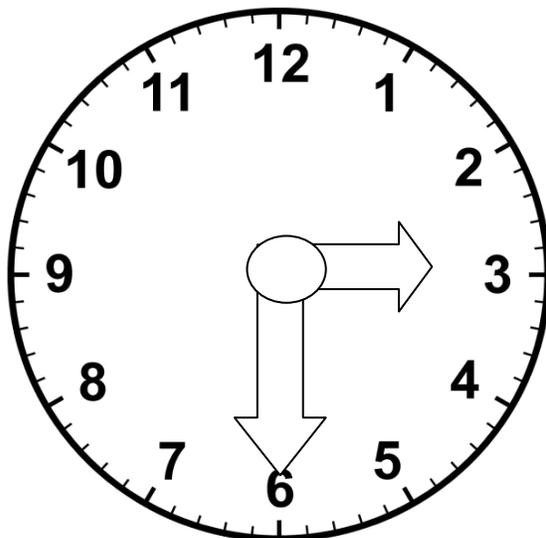
Circle the time that reflects the analog clock .

- | | | |
|--------------------------|--------------------------|-------------------------|
| 1. It is three fifteen. | It is five o'clock. | It is four thirty |
| 2. It is twelve o'clock. | It is two forty-five. | It is three o'clock. |
| 3. It is eleven o'clock. | It is six thirty. | It is one forty-five. |
| 4. It is ten twenty. | It is seven twenty-five. | It is three twenty-two. |

Challenge: Circle the time that reflects the analog clock.

- | | |
|--|-------------------------------------|
| 1. It is a quarter past three o'clock. | It is half past four o'clock. |
| 2. It is a quarter to two o'clock. | It is ten minutes to three o'clock. |

Now you write the time!





Telling time on the railroad

5th - 6th Grade

Activity 9: Time Zones

5th – 6th Grade

Demonstrate! Take a flashlight and move the light across the map from east to west demonstrating that 12:00 noon would come first on the east coast before the other parts of the country. Set the clock on the East Coast as 12:00. When you get to the next time zone, change the East Coast clock to 1:00 and the new zone 12:00. Continue setting the clocks in the new zones and changing the previous zones 1 hour later until all the zones have been set. Discuss what time it is in each zone when the last zone is 12:00. Have students describe the relationship of time with the time zones across the country.

- The teacher will announce a time in a particular time zone. Student will be responsible for setting the correct time and in the correct zone. Same student or other students then will set the other clocks to the correct time for each of the other zones.

Activity 10: Writing about Time

5th – 6th Grade

Have students write about time by researching and answering these questions.

- What caused the need for standard time?
- Why is it important to tell time?
- What is the purpose of time zones?
- Where is precise time used daily?
- Why do TV stations list times for a show as different times? (8:00 Eastern /7:00 Central)
- Why do we have Daylight Savings Time? When does it start? Who suggested it?

