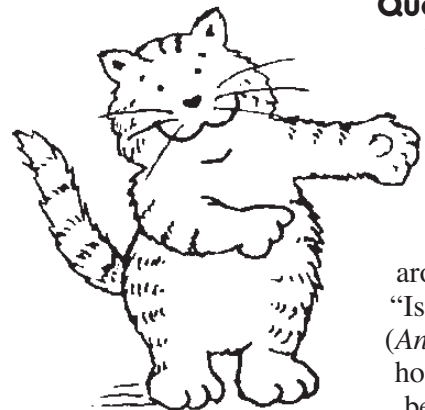


When using hours and minutes to show the time, be careful to move the hour hand a bit for each number of minutes moved around the clock face. Make sure students understand that the movement of the hour hand is coordinated to the movement of the minute hand. For example, to show 9:10, the minute hand should point to the 2, and the hour hand should be a little past the 9. Continue with examples to show various one-, five- and ten-minute times such as 5:09, 8:25 or 6:10.

Half-Hour and Quarter-Hour Times

Place a clock dial on the overhead, and set the time to 10:00. Direct students to watch as you move the minute hand to the 6. Ask “How many minutes did the minute hand move?” (*Answer: 30 minutes.*) “Is that halfway around the clock?” (*Answer: Yes.*) “Is 30 minutes equal to 1/2 hour?” (*Answer: Yes.*) “Where should the hour hand be?” (*Answer: halfway between 10 and 11.*)



Show students that a half-hour time can be expressed by writing the number “10:30” and by saying “ten thirty” or “half past ten.” Use the same questions and procedure to show times on the quarter hour, to be written as “10:15” and to be said “ten fifteen” or “a quarter after ten” for “10:45,” say “ten forty-five” or “a quarter to eleven.” Talk about the “quarter to” time and why the next hour is used to express the time verbally. Relate the half- and quarter-hour time to the fractions 1/2, 1/4 and 3/4.

Elapsed Time

To figure out elapsed time, show students how to move the hands forward (clockwise) to indicate a *time from now*, and to move the hands back (counterclockwise) to indicate a *time ago*. By turning the hands forward or back, students can count on or count back to mentally find solutions to “addition” and “subtraction” situations involving units of time. When discussing elapsed time, use two overhead clock dials on the projector, one to indicate the starting time, the other to indicate a time from now (forward) or a time ago (back).

Also, use real-life situations for elapsed time problems. For example: Show 4:10 on the start clock and say, “I have just put a roast in the oven, and it will take 2 hours before it is tender and ready to eat. What time should I take the roast out of the oven?”

Ask a student to come to the overhead to show 6:10 on the second clock dial. Write and say “4:10 + 2 hours = 6:10.”

Try this activity involving minutes: It is now 10:15, and we began this class 25 minutes ago. At what time did this class begin? (*Answer: 10:15 – 25 minutes = 9:50.*) Then present situations involving elapsed time for hours and minutes.



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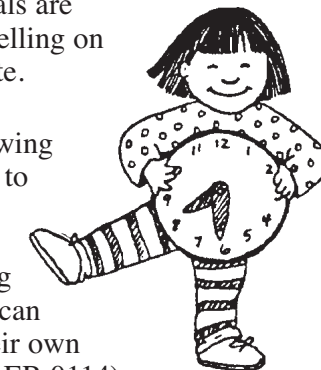
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OVERHEAD Clock Dials Teaching Guide

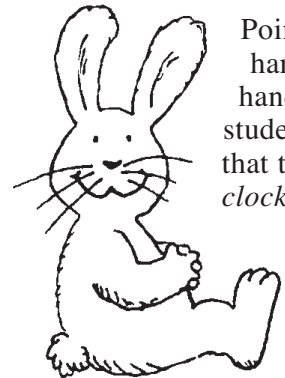
The *Overhead Clock Dials* (LER 0570) are transparent analog clock faces with movable hands. There are hour and minute marks around the clock face with Arabic numerals 1-12 corresponding to the hour marks. The movable hands on the clock dials are especially helpful for demonstrating time-telling on the hour, half hour, quarter hour, and minute.

The movable hands also are useful for showing clockwise and counterclockwise directions to calculate elapsed time. While learning time-telling skills, students can also reinforce their counting skills with counting by ones, fives, and tens up to 60. Students can follow along with you by working with their own classroom clocks (*Standing Clock Faces*, LER 0114).



The Clock Face

Display the clock dial on the overhead. Ask students to describe what they see on the clock face (*Answer:* numerals 1-12, short hand, long hand, marks around the clock). As you point to each of the numerals 1-12, have students count along with you. Place the minute hand on the 12, and move the hour hand to each number 1-12. Ask questions about clocks in general, such as, “What do you think a clock does? How can you use a clock? Where do you find clocks? Who has a clock (or watch)? Do you have a clock or watch? Does the face of your clock or watch look different than this one?”



Point out and name the hands as hour and minute hands. Explain that the short hand is the hour hand and that it indicates the hour time. Ask students why a minute hand is needed. Show them that the hands can move around the clock face *clockwise* and *counterclockwise*. Ask, “Which way do the hands turn when a clock is showing the time?” (*Answer:* clockwise.) “When would the hands turn counterclockwise? (*Answer:* to reset a time, adjust to Daylight Savings Time.)”

Activity Times

Place a clock dial on the overhead, and ask students about their day with questions such as: “What time do you wake up? Eat breakfast? Catch the school bus? Start the school day? Have reading class? Eat lunch? Go out for recess? Get home from school? Eat dinner? Watch your favorite television show? Go to sleep?”

For each activity, have students say and show the time on their classroom clocks. Then ask a few volunteers to show the times on the overhead. Depending on the students’ level, expect on-the-hour or exact times. When discussing these activity times, ask whether these activities take place in the *morning*, *afternoon* or *evening*.

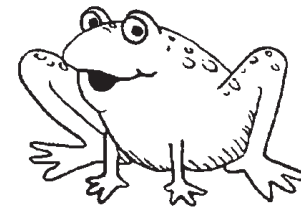
Ask older students how they would distinguish between 8:00 in the morning and 8:00 in the evening. This can be a lead to a discussion about *AM* and *PM*, as well as 24-hour clock times.

Hour Times

For younger students, hour times are also known as “O’clock times.” Place a clock dial on the overhead and set the times on the hour starting at 1 o’clock and have students tell the time. Students should



follow along with their clocks, setting the time to the same time as your overhead o’clock dial. Give mixed practice by setting the clock at various hour times. After students have identified various hours, show them how “O’clock” hour times are written as 1:00, 3:00 or 10:00.



After basic recognition of hour times, tell students that in order to get from one hour time to the next hour time, the minute hand must turn around the clock face 60 minutes. Have students watch a real clock or watch during the day to see how the hands move around the clock face. Ask students to estimate how long an hour takes. Use examples such as: “Do you think it takes an hour to watch a television show? Bake a cake? Watch a movie? Read a book? Eat lunch and have recess? Practice the piano?” These examples should help students gain some insight about the length of time that elapses between hours.

With older students, explain that $1 \text{ day} = 24 \text{ hours}$. Ask, “If there are 24 hours in a day, why does this clock face show only the numbers 1-12? Discuss *AM* and *PM* times, as well as 24-hour clock times.

Minute Times

Display a clock dial on the overhead. Point out the hour and minute marks around the clock face. Set the clock at 9:00, then proceed to move the minute hand around the clock face, showing 1, 2, 3, 4 and then 5 minutes after the hour. Estimate, say the time as 9:00 (9 o’clock), 9:01 (one minute after 9 o’clock), 9:02 (two minutes after 9 o’clock), 9:03 (three minutes after 9 o’clock), 9:04 (four minutes after 9 o’clock), and 9:05 (five minutes after 9 o’clock).

Continue counting the minutes by ones to 60 until you get to the 12 on the clock face. Students can talk along with you the first time, then have them respond as a group as you point to each minute mark around the clock face. Make students aware that $1 \text{ hour} = 60 \text{ minutes}$.

You may wish to talk about how long a minute is by asking questions such as, “Does it take a minute to brush your teeth? Put on a shirt? Count to 60? Tie your shoe?” After discussing one-minute intervals and counting by ones around the clock face, count by fives and then by tens.

