

It's About Time

Students rotate the hands of a clock to show time to the nearest minute.

Getting Ready

- 1. Distribute 1 copy of the blackline master "It's About Time" to each student. Have students cut out the clock face and 2 hands. (To make a sturdier "clock," have students paste the clock face onto a paper plate or piece of tag board.)
- 2. Tell students to align the filled circles on each hand with the filled circle in the center of the clock face. Then, insert a metal fastener through the circles on the hands and clock face. Turn the clock over and press the feet of the fastener flat against the back of the clock.

How to Play

- **1.** Have students play this game in pairs. Each student in the pair has a clock and 2 number cubes.
- 2. Begin by having each player rotate the hands on his or her clock to show 12 o'clock. Next, invite each player to roll 2 number cubes and make the greatest 2-digit number less than 60. For example, if a player rolls a 4 and a 3, the player rotates the hands to show 12:43, since 43 > 34. If a player rolls a 6 and a 5, the player rotates the hands to show 12:56, since the greatest 2-digit number less than 60 you can make using these two digits is 56. [Be sure that the players also rotate the hour hand to reflect time past the hour.]
- **3.** The winner of the round is the player whose clock shows the greater elapsed time past the hour of 12. Players then rotate the hands back to show 12:00 and play another round. A game consists of 5 rounds, and the player in each pair who wins more rounds is the overall winner.
- **4.** A variation of this game is to have players show the time before, rather than after, the hour. So, tossing a 3 and a 4, the student rotates the hands to show 12:43, rather than 12:34. The player whose time is closer to the hour wins the round.

Assessment Tip

Observe students as they play the game. Find out if they can:

Show the correct time to the nearest minute past (or before) the hour.

blackline master: "It's Try this, too! About Time"—1 copy

per student scissors metal fastener (1 per student) paper plates (optional) number cubes (2 per student)

Approximate Time

Students will need

30 minutes

Grouping

pairs of students

NCTM Standards

- Measurement
- Representation

Invite your students to play a game called "It's Time for Fun!," to reinforce skills in telling time. Group students in pairs and give each pair a stack of 20 index cards that you prepared ahead of time. Ten cards show digital times, and the other 10 cards show corresponding analog times; e.g., 2:45 and 15 minutes before 3. Have each pair mix up the cards and place them face down in 4 rows on a table. One student turns over 2 cards trying to find matching times. If a match is found, the student keeps the cards and takes another turn. If not, the student returns the cards to the game board and the next player takes a turn. When all the cards have been matched, the player with the greater number of cards is the winner.

Name

It's About Time

Cut out the clock face and the two hands. Place the hands above the center of the clock face so that the filled circles overlap. Then, use a metal clip to attach the hands to the clock face.





Making Change

Students count up to make change using the fewest number of bills and coins.

Getting Ready

- **1.** Tell students that you have \$2.00 to pay for an item that costs \$1.65. Invite them to calculate the correct change by counting up from \$1.65 to \$2.00. Any correct combination of coins is acceptable.
- Record on the chalkboard the various combinations of coins that students suggest. (35 pennies, 3 dimes and 1 nickel, 7 nickels, etc.) Then, ask students to identify the fewest number of coins possible that can be used to make up the correct change. [2 coins: 1 dime and 1 quarter.]
- 3. Repeat this activity using other amounts of money less than \$10.00.

Introducing the Activity

- **1.** Have students work in pairs to complete this activity. Distribute one copy of the blackline master, "Making Change" to each pair, and read aloud the directions at the top of the page.
- Direct students' attention to the first problem and invite them to count up from \$1.73 to \$3.00 to determine the correct change. Then, have them determine the fewest number of coins that make up the change: 2 pennies [\$1.73 + \$0.02], 1 quarter [\$1.75 + \$0.25], and 1 dollar [\$2.00 + \$1.00].
- **3.** Next, show students how to record the answer. Have them write 1 in the "dollar" column, 1 in the "quarter" column, and 2 in the "pennies" column. This shows that the fewest number of bills and coins needed to make the correct change in this example is 4.
- 4. Have students work together to complete the remaining problems.

Assessment Tip

Observe students as they calculate the change in each example. Find out if they can:

- Use a counting up strategy to make change within \$10.00.
- Determine the fewest number of bills and/or coins that can be used to make the correct change.

Try this, too!

- To challenge students to think about coin combinations, divide the class into groups so that there are 3 or 4 students in each group. Then, choose a value, such as 57¢, and ask each team to come up with as many combinations of coins that make 57¢. Have each team record the various combinations they come up with and then share their results with the whole class. Choose a different number and repeat this activity.
- Challenge students with coin riddles. For example, give students the value of an amount of money and the number of coins that make up that amount. Have students identify the bills and/or coins that make up the amount. For example, I have 2 coins and 30 cents in my pocket. What coins do I have? [1 quarter, 1 nickel]

Students will need

- blackline master: "Making Change"— 1 copy per student
- Approximate Time

30 minutes

Grouping

pairs of students

NCTM Standards

- Number & Operations
- MeasurementProblem Solving

Name

Making Change

The numbers in the first column show the cost of different items. How much change will you get after giving a clerk the amount of money in the second column? Use the fewest number of bills and coins as you can to show the correct change.

		Change							
Cost of Item	Amount given	Dollar	Quarter	Dime	Nickel	Penny			
\$1.73	\$3.00								
\$1.20	\$5.00								
\$7.26	\$7.50								
\$8.14	\$10.00								
\$0.22	\$1.00								
\$0.11	\$0.25								
\$4.12	\$5.00								
\$5.80	\$10.00								
\$6.45	\$10.00								



What's My Temperature?

Students read and graph temperatures on a thermometer.

Getting Ready

Distribute 1 copy of the blackline master, "What's My Temperature?" to each student, along with scissors and colored pencils or pens.

Make a Thermometer

- **1.** Direct students' attention to the 3 strips on the left side of the activity sheet. Have students color the middle strip red. This strip represents a column of liquid in a thermometer. Then, have students cut out the 3 strips.
- **2.** Next, paste the short ends of the 3 strips together as shown on the right, to create one long strip, with the red strip in the middle.
- **3.** Have students color the bulb (only) of the thermometer red. Finally, cut out the thermometer. Then cut along the dotted lines to make a slit at the top and bottom of the thermometer. Caution students not to cut through the sides of the thermometer.
- **4.** Insert the top of the long strip through the top slit of the thermometer so that the red strip is in front. Then, insert the bottom of the strip through the bottom slit so it is behind the thermometer.

How to Play

- **1.** Have students play this game in pairs. One player may either slide the strip to show a temperature in degrees Celsius on the thermometer and challenge the other player to read the temperature, or call out a temperature and challenge the other player to slide the strip to show that temperature.
- **2.** Play continues with players alternating turns. The first player in a pair who stumps the other by either showing a temperature that the opponent cannot identify, or by calling out a temperature that the opponent cannot show on the thermometer, is the winner. Have students play multiple games, keeping track of how successful each player was overall.

Assessment Tip

Observe students as they play the game. Find out if they can:

Read and graph temperatures on a thermometer.

Try this, too!

Use chalk to make an outline of a large thermometer on the playground. Create a scale from 0°C to 100°C, marked in increments of 5 degrees, if possible. Have one student hold one end of a (long) piece of red yarn and stand to the left of 0°. Call out a temperature. Another student must pick up the free end of the yarn and stretch it until it lies opposite the given temperature. Have students take turns using the yarn to show different temperatures.

Students will need

- blackline master: "What's My Temperature?"— 1 copy per student
- scissors
- red crayon or pencil
- paste

Approximate Time • 30 minutes

Grouping

pairs of students

NCTM Standards

- Number & Operations
- Measurement
- Representation

Name

What's My Temperature?

- **1.** Color the middle strip red. Color the circle on the bottom of the thermometer red.
- 2. Cut out the 3 strips. Then paste them together, end-to-end, with the red strip in the middle.
- 3. Cut out the thermometer. Cut slits along the dotted lines at the bottom and top.
- 4. Slide the top of the long strip through the top slit of the thermometer so that the red part is in front. Slide the bottom of the long strip through the bottom slit of the thermometer.
- 5. Slide the long strip so that the top of the red strip shows the temperature.



Making Change: Answer Key

The numbers in the first column show the cost of different items. How much change will you get after giving a clerk the amount of money in the second column? Use the fewest number of bills and coins as you can to show the correct change.

		Change						
Cost of Item	Amount given	Dollar	Quarter	Dime	Nickel	Penny		
\$1.73	\$3.00	1	1			2		
\$1.20	\$5.00	3	3		1			
\$7.26	\$7.50			2		4		
\$8.14	\$10.00	1	3	1		1		
\$0.22	\$1.00		3			3		
\$0.11	\$0.25			1		4		
\$4.12	\$5.00		3	1		3		
\$5.80	\$10.00	4		2				
\$6.45	\$10.00	3	2		1			