Time of Your Life
Grades K-2

The Big Idea
Today you're going to explore time in different increments by lining up in birth month order and by turning yourselves into the hands of an analog clock!

Supplies
In your kit:
- ★ Clock numbers: 2 packets
- ★ Masking tape

You provide:
- ★ Marker
- ★ Paper: 1 sheet per each kid, plus 2-4 extra for "Hour Hand" and "Minute Hand" signs
- ★ Pencil: 1 per kid
- ★ Stopwatch or cell phone with a stopwatch function
- ★ Writing surface: whiteboard or large sheet of paper

Key Prep
- ★ Clubs with enough space and volunteer helpers can play on 2 clocks. Otherwise, you can set up only 1 clock. See page 3 for details.
- ★ Make 1 paper sign that reads "Hour Hand" and 1 that reads "Minute Hand." Make 1 set per clock.

Room Set-up
- ★ Clear an open floor space, about 10 x 10 feet, to lay out a clock face. Optional: If space allows or if you don't have a volunteer helper, set up the Clock Numbers ahead of time as described below in All Hands on Deck.

What's the Math?
- ★ Time measurement
- ★ Understanding units of time

Kickoff

"How do we measure time? What do we call big amounts of time?" **Discuss**. Answers can include a year, decade (10 years), century (100 years), or millennium (1,000 years). "What do we call the tiny amounts?" **Discuss**. Answers can include days, hours, minutes, or seconds. "What tools do we use to keep track of time?" **Discuss**. Answers can include calendars, clocks, etc. "Let's see how well we can measure time!"

Birthday Bar Chart (10-15 minutes)

"Months are about 4 weeks long and divide the year. Do you know the order of months in a calendar?" **Discuss**. "If we look at all our birthdays, which month do you think will have the most birthdays?" **Discuss.** Take guesses!

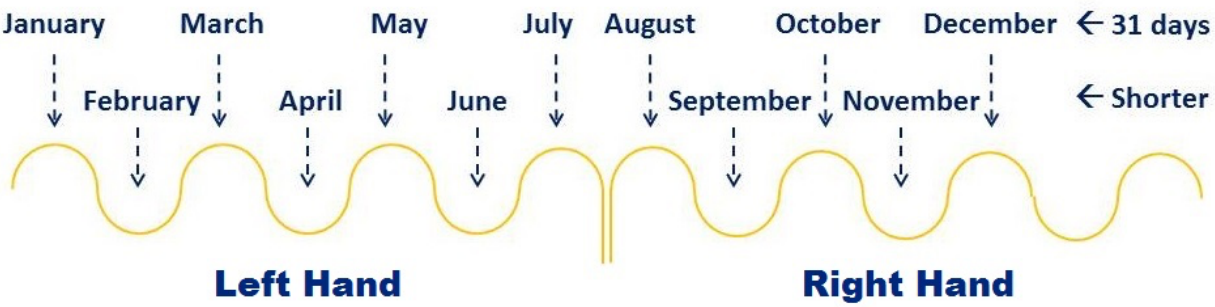
1. Have everyone separate into groups based on their birth month.
2. Tell kids they'll be forming a human bar chart. Each month will get its own line or "bar" of kids, and months with more kids will have longer bars. →

3. Use 12 pieces of masking tape on the floor to indicate the months. Show kids where the month's bars should start.
4. When everyone is lined up, see which bar is longest – that's the most common birth month for your club!

Extra Challenge (optional)

See how quickly the kids can line up in date order within each month (with the first of the month at the front).

Party Fun Fact: Teach the kids the "Knuckle Rule." Make 2 fists and put them next to each other, knuckles facing up. Name the months starting with January on the leftmost knuckle. All knuckle bumps are the 31-day months, and the dips in between have 30 days (or 28 for February).



All Hands on Deck (15-25 minutes)

"Now let's talk about smaller units of time – hours and minutes. We use clocks to tell the time, Can you think of some places you've seen clocks?" **Discuss.** See if kids mention microwaves, stoves, smart phones, etc. "Some clocks have hands that spin in a circle and point to numbers to tell us the time. Those are **analog** clocks. They came long before electricity and digital clocks! Today you're going to be the hands of a clock and race to show the time!"

1. Review briefly how the short and long hands of a clock work. You can show kids this photo, if you don't have a clock in the room, or draw a sample on your writing surface.
   - ★ The short ("hour") hand takes an hour to advance from one number to the next number (for instance, from 1 to 2).
   - ★ The long ("minute") hand takes 5 minutes to advance from one number to the next number, and it takes an hour to go around the clock once.
   - ? "What time does the clock say when the minute hand is on 12 and the hour hand is on 10?" (Answer: 10:00)
   - ? "And how do we read the clock when the hour hand points halfway between 10 and 11, and the minute hand is on 6?" (Answer: 10:30, or "half-past 10")

1. If you haven't done so already, let the kids help you tape the Clock Number printouts to the floor in a 10-foot circle like a giant clock. If you have the space, lay out a second identical clock next to it.
2. Mark the center of each clock with a small masking tape X.

CLUBS WITH 2 CLOCKS

1. Divide the kids into 2 teams. Each team lines up behind a clock.
2. The first 2 contestants from each team decide who will be the hour hand and the minute hand. Give them the "Hour Hand" or "Minute Hand" signs as a reminder.
3. Now the race begins! Call out a whole-hour time: "6 o'clock!"
4. The 2 contestants from each team lie face up inside their clock as the "hands," each pointing to the right number. The minute-hand people extend their arms to be longer than the hour hands.
5. The first team to position themselves correctly scores a point! Record on a blackboard or sheet of paper.
6. Repeat with the next pair of contestants from each team. Assign their roles right before they start, otherwise they might forget.

7. Let the spectators call out whole-hour and half-hour times for the contestants to make.
8. When everyone has gone at least once, see who won!

CLUBS WITH 1 CLOCK

- ★ Follow steps 1-9 above, except when you call out a time, start your stopwatch and hit stop when the players make the correct time. Record each pair's time on the score sheet. The winning pair has the fastest time!

Extra Challenge (optional)

- ★ Try quarter-hours like 4:15!

Bonus, if you have time: Time for a Birthday (10 minutes)

"Let's play a fun game with a digital clock, like you see on microwaves, stoves, and smart phones."

1. Hand each kid a piece of paper and a pencil.
2. Ask the kids to write their birth date in numbers. If needed, you can list the months in order (Jan = 1, Feb = 2, etc.) while kids count on their fingers.
   - ★ "Let's see what clock time our birth dates make: the time that shows the month and day of your birthday. This clock here shows September 14 because September is the 9th month of the year, and then the 14 shows it's the 14th day."
3. Show the kids this graphic or write it on your writing surface:

09:14

4. Ask kids to write their birth month number as the "hour." Then ask the kids to put the birth *day* as the "minutes."
   - ? "Were you all able to come up with a time that shows your birthday? (The answer should be yes.)
   - ? "And can any birthday work?" **Discuss**. Let the kids figure out that yes, any birthday can have a matching clock time. Why? The hours go up to 12, so all 12 months are covered. And minutes go up to 59, which covers all dates since no month has more than 31 days.
   - ? "Your birthday time shows on the clock twice a day. Are you awake at both times or just one?" **Discuss**. June (6 hour), July (7 hour), August (8 hour) and September (9 hour) birthdays are times when kids might be awake in the morning and evening!
   - ★ "Now, let's find out what time our names make!"
5. Ask kids to count how many letters are in their first names. They should use that number as the hour.
6. Then ask the kids to count how many letters are in their last names for the minutes. For example, the name Jonathan Smith would be: 08:05.

7. If any kid has more than 12 letters in his/her first name, use 12 for the hour and add the extra letters to the last name for additional minutes!

Extra Challenge (optional)

Let the kids wrangle with these before giving hints, so they have a chance to get the answer and feel that victory:

- ? "What time has the same number in all 4 places?" (Answer: 11:11)
- ? "What's the largest number you can make using the digits on the clock?" (Answer: 12:59)
- ? "What's the smallest number you can make?" (Answer: 01:00)

Wrap Up

"Time flies when you're having fun and doing math! And it wasn't too different from problems in your math book that ask you to group like items together or list things in order. And when you get older, you'll learn all about bar charts! We've been doing more than just lying on the floor – we've been learning to tell time on a clock!"