

MARLINS OF RALEIGH PACE CLOCK WORKSHEET



Hi, I'm a **pace clock**, and I have several purposes in my life:

1. I help swimmers know when to start their sets in swim practice;
2. I help swimmers be able to know how fast they are swimming;
3. I can be used as a method of "traffic control" during practice.

I come in several shapes and sizes but usually I have two hands to help me do my job. In my current look (see my photo on left), I have a red hand and a black hand. The red hand moves $\frac{1}{60}$ th of the clock every **second**. The black hand moves $\frac{1}{60}$ th of the clock every **minute**. In addition, I have 12 big numbers (from 5 to 60) that are placed next to 12 red triangles. Each red triangle shows 5 seconds of time (as measured by the red hand) or 5 minutes of time when measured by the black hand.

Send-Offs

To introduce swimmers to my first function, known as a **send-off**, you need to understand that coaches may want you to be ready at a moment's notice to start a swim set. Knowing the location of the numbers on the pace clock will help you be ready on time. Watching me at the start of a set is critical for leaving accurately and with your other teammates at the practice who are working on the same set. **See if you can draw a red hand on my face that shows where the hand would be if you needed to leave on:**

The 60



The 15



The 30



The 25



Often swimmers at practice will find that they are sharing a lane in the pool with several other swimmers. As not every swimmer can leave the wall at once as it would cause a huge traffic jam in the swim lane, coaches often wisely have swimmers start their set taking turns and leaving five (5) or ten (10) seconds apart in most cases. **Here are additional challenge questions. See how many you can get right:**

A) You are going second in the lane and you are told to leave 10 seconds apart starting on the Top. Draw where the red hand would be when you should leave the wall.



B) You are 4th in your lane and told by the coach to go five seconds apart. The first swimmer leaves on the 30. Draw the red hand for your send-off.



C) You are the lane leader and your coach says to leave on the bottom of the clock. Draw the location of the red hand when you would leave the wall.



D) If you are 3rd in a lane and the coach says, "Go 10 seconds apart. First swimmer on the Top (or 60)". Draw the red hand where it would be when it is your turn to leave the wall.



E) You are last in a lane with 6 people in it. The coach tells the first swimmer to leave on the 30. Draw where the red hand will be when you will get to go.



F) You are 2nd in line on a set of 10x50 freestyles. The set started on the 60. Everyone is 5 seconds apart. The 50s are on 1:05 each. Draw where you would start the 3rd 50.



Calculating Your Time On Repeats & Interval Training

After you begin to understand using the pace clock for leaving the wall to start a set, it's time to start challenging your clock-reading skills. Your knowing how to get your own time off the pace clock for a distance swum will help free up your coach to help offer stroke technique tips while you keep track of your progress on the set. If you know your speed (time) for a given swim (for example, 100 yards freestyle) it will often challenge you to move even faster (or slower if the type of training your coach is looking for requires it).

For the next challenge, you will be given a scenario that could occur in a practice set. Answer the questions by drawing the second hand on the pace clock as requested:

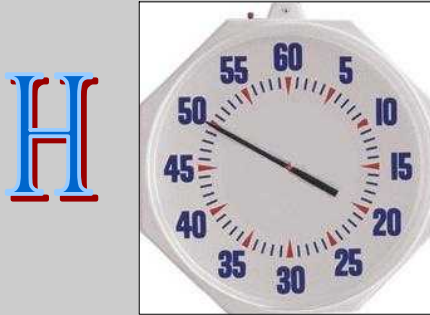
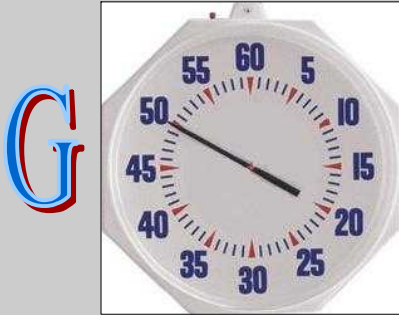
EXAMPLE:

Three lanes of your practice have five swimmers in each lane. The coach has given all three lanes the same set of 10 x 100 Freestyle. Lane 1 is expected to do every 100yd swim (repeat) in 1 min 20 sec (1:20). The 1:20 is known as an interval. Lane 2 has been asked to swim on 1:30 for their interval and Lane 3 has been asked to swim on 1:45. **Draw the second hands on the pace clocks below as appropriate:**

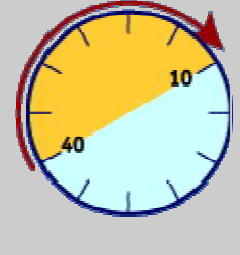
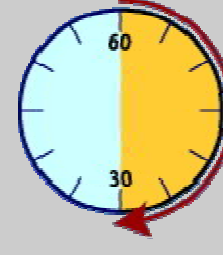
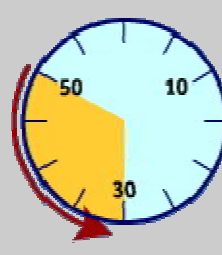
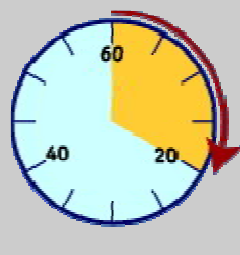
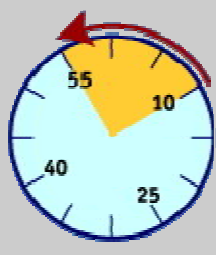
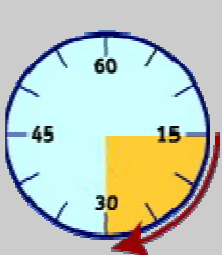
G) The first swimmer in Lane 1 leaves on the 60. The swimmers are 5 sec. apart. When does swimmer #3 leave?

H) When does swimmer #5 leave?

I) When would the first swimmer in Lane 1 go on the 2nd 100?



Breaking up the clock (pie) into segments will help swimmers quickly calculate the time that has passed while they have been swimming. Here are some common segments and the seconds each represents:



1/4 of the clock = 15 seconds

1/3 of the clock = 20 seconds

1/2 of the clock = 30 seconds

Using the scenario given in the example above, we now want to calculate times swum by the swimmers on the set of 10x100yd Free.

Example: If the swimmer going first in Lane 2 on the 1:30 starts on the 60 and finishes on the 19 what would their time have been? The clock has gone around once, so one minute has gone by. From the 60 to the 15 is one quarter of the clock or 15 seconds. Then there are 4 seconds from the 15 to the 19, so the swimmer has swum the 100yd distance in 1 minute + 15seconds + 4 seconds or 1:19. Use the clock segments above and see if you can answer the following questions correctly:

J) If Swimmer #1 in Lane 3 on the 1:45 interval leaves on the 30 and comes in on the 60, what was Swimmer #1's time? _____

K) If swimmer #2 in Lane 1 leaves on the 10 and finishes on the 15 what was Swimmer #2's time? _____

L) If Swimmer #1 in Lane 2 leaves on the 60 and finishes on the 10 what was Swimmer #1's time? _____

M) How many seconds to rest will the swimmer in K have to rest? _____

N) In the third lane on the 1:45 interval, the 2nd swimmer left on the 25 and swam a 1:30. What was the number on the clock when this swimmer hit the wall at the end of the 100? _____

O) If Lane 2 is on the 1:30 interval, how many minutes will elapse before they have to start the 7th 100? _____

P) How many 100yd Freestyles on the 1:20 can Lane 1 do in 12 minutes? _____

Why is reading the pace clock so important for swimmers? Practice times are an exact measurement of our performance. You may try to swim faster, but the actual results of your efforts are unknown until you read the clock. It is possible that swimmers who try to swim harder lose efficiency in the water and actually swim slower. Another benefit is being able to set clearly defined goals. If the group is working on a descending set of 100s and the swimmer knows he went a 1:25 on the first 100, the he knows his goal for the next one is a 1:24 or better. When used properly, the clock and swim intervals serve as deadlines telling the swimmers, "it's time to go!"

TYPES OF SETS

Straight Sets
During a straight set, the distance per repeat and the interval per repeat remain constant.
Example: 10x50yd on 1:00

Fixed Rest Sets
In a fixed rest set, the amount of rest following a repeat will be the same regardless of swim speed.
Example: 4x200yd with :30sec rest.

Broken Swims
Race distances that are divided into smaller increments with breaks for Rest after each segment.
Example: 200yd swim broken for 5 seconds as 50-25-75-25-25.

Descending Set
Some sets have a reducing interval which requires the swimmer to know when to leave and how fast they have swum.
Example: 6x100yd Free starting on 2:00, then 1:55, 1:50....

Ladders
In a ladder set, the swimmer may be asked to swim on a set amount of time for each 25yd or 50yd segment.
Example: 300, 250, 200, 150, 100, 50 on 1:00 per 50yds.