# The Ichiro Problem
# Lesson Plan

Adapted by Steve Klarevas
from the Lesson Study by:
Linda Gillen, Candice Ives, Steve Klarevas, and Rae Perry  Math
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## The Task

It has been one month since Ichiro's mother has entered the hospital.  Ichiro decided to pray with his younger brother at a local temple every morning so that she will get better soon.  There are 18 ten-yen coins in Ichiro's wallet and just 22 five-yen coins in the younger brother's wallet.  They decided to take one coin from each wallet every day, put them in the offertory box, and continue to pray until either wallet becomes empty.  One day when they were done with their prayer, they looked into each other's wallets.  The amount of money in the younger brother's wallet was greater than Ichiro's amount of money.  When this happened, how many days had it been since they started their prayers?

## Materials

- The task
- Several coins and a coin bank (for teacher demonstration)
- Graph paper
- Rulers
- Manipulatives such as two-color counters or linking cubes
- Calculators
- One large presentation paper per group

## Facilitating Task

- Class will be divided into groups of 3-4 students.
- Read the task together and answer clarifying questions.
- Groups will be given materials upon request.
- Give students individual think time and then work together in groups.
- Groups present findings during last 10-15 minutes of class.

## Misconceptions

- What is the first day, day zero or day one?
- Incorrectly defining the variable (i.e., number of days versus number of coins versus value of coins)
- Incorrectly answering the question (i.e., 15 days versus 14 days)

## Suggested Prompts or Questions

- What is the question asking?
- What is the unknown?
- How will you represent the unknown?
- What is the pattern?