Working with Remainders
Answer Sheet

Use modular arithmetic to solve these problems. Answer the following questions, using the activity to check your work:

1. If my birthday was on a Tuesday last year, and this year is not a leap year, what day of the week will my birthday be on this year?
   
   Set the clock size to 7 (the number of days in a week)
   Set the starting time to 3 (because Tuesday is the third day of the week)
   Set the elapsed time to 365 (for the number of days in the year)
   Answer is: Wednesday (shown by a 4 on the clock)

2. I had 34 cookies that I divided evenly among 4 friends. I ate the leftover cookies. How many cookies did I eat?
   
   Set the clock size to 4 (the number of friends you are dividing by)
   Set the starting time to 0
   Set the elapsed time to 34
   Answer: 4 remaining cookies

3. I bought as many pencils as I could at 25 cents each and spent the rest of my money on stickers which cost 2 cents each. In all, I spent $1.60 before tax. How many stickers did I buy?
   
   Set the clock size to 25 (the price of one pencil)
   Set the starting time to 0
   Set the elapsed time to 160
   Divide the remaining money ($0.10) by 2 (the price of each pencil)
   Answer: 5 stickers

4. Using a regular deck of 52 cards, I dealt all the cards in the deck to Max, Keisha, and myself for a game of war. Were the cards dealt evenly?
   
   Set the clock size to 3
   Set the starting time to 0
   Set the elapsed time to 52
   Answer: No because there would be one card leftover
5. A gallon of milk is 16 cups, and one pudding recipe uses 3 cups. I have 2 gallons of milk and want to make 10 recipes of pudding with at least 1 cup left to drink. Is this possible?

   Set the clock size to 3
   Set the start time to 0
   Set the elapsed time to 32 (16 cups times 2 gallons)
   Answer: Yes, because there would be 2 cups leftover.

6. Summer camp starts on a Monday and lasts for 44 days. One what day will it end?

   Set the clock size to 7
   Set the start time to 2
   Set the elapsed time to 44
   Answer: Wednesday (represented by a 4)