

Calendar Math

Reporting Category	Measurement
Topic	Identifying equivalent periods of time
Primary SOL	3.12 The student will identify equivalent periods of time, including relationships among days, months, and years, as well as minutes and hours.
Related SOL	3.11

Materials

- Equivalent Times Matching Cards (attached)
- How Many? Task Cards (attached)
- How Many? Recording Sheet (attached)
- January Calendar (attached)
- Game Cards for the Calendar Game (attached)

Vocabulary

days of the week, months of the year, *hours*, *minutes*, *time*, *equivalent relationships of time*

Student/Teacher Actions (what students and teachers should be doing to facilitate learning)

Note: Before undertaking this activity, create a set of Equivalent Times Matching Cards and a set of How Many? Task Cards for each group of students.

1. Put students into small groups, and give each group a set of Equivalent Times Matching Cards. Explain that students will be using their prior knowledge of telling time and reading calendars to find matches for the set of cards. Have students in each group work together to match the cards. Then, have a representative from each group share some of the group's answers to the matching cards.
2. Give each group a set of four How Many? Task Cards, and distribute a copy of the recording sheet to each student. Explain to students that they will be using the task cards to determine equivalent periods of time for days-weeks, months-years, minutes-hours, and hours-days. Ask students what they will need to know about units of time in order to complete each task card. (How many smaller units are in each larger unit) Ask whether there is a pattern to determining these equivalent periods of time. Have groups discuss the solutions for each task card, and have each student record the answers on their individual recording sheets. Then, have a representative from each group share some of the group's answers to the task cards. Ask students whether they see a pattern, and if they do, whether there is a "rule" for the pattern in each of the cards.

Assessment

- **Questions**
 - Which is the longer time, 2 hours or 110 minutes? How do you know?
 - If you are out of school for 2 weeks, how many days do you miss school? How do you know?

- **Journal/Writing Prompts**

- Construct a calendar for your birthday month. Mark your birthday on the calendar.
- Construct a calendar for October with the first of October on a Friday. There are 31 days in October. What is the date of the third Thursday?
- Use a calendar to write about the events that happened in this month.

Extensions and Connections (for all students)

- Play the Calendar Game with students. Students may work in pairs. Each pair will need a copy of the game board (attached January Calendar), one set of the attached Game Cards for the Calendar Game, and two game markers for the board. The rules are as follows:
 - Shuffle the cards, and place them face down in a stack.
 - Player 1 draws a card and must answer the question.
 - If the answer is verified as correct by the teacher, Player 1 may advance his/her marker one day on the game board.
 - If the answer is incorrect, Player 1 does not advance, and Player 2 may either answer the question and advance if the answer is correct or draw another card.
 - Drawn cards are put back at the bottom of the stack.
 - Players continue to take turns drawing cards and answering the questions.
 - The first player to reach END wins.

Strategies for Differentiation

- Provide a felt calendar and numbers with Velcro backs. Have students construct a calendar for a given month. Ask students to point to a particular day that has happened or will happen and relate it to a class event on that day.

Equivalent Times Matching Cards

Copy cards on card stock, and cut apart.

12 months	1 year
60 minutes	1 hour
24 hours	1 day
120 minutes	2 hours
2 weeks	14 days
48 hours	2 days
24 months	2 years
3 weeks	21 days

How Many? Task Cards

How many months in __ years?

Months	Years
12	
	2
36	
	4
	5

How many hours in __ days?

Hours	Days
	1
48	
	3
	4
120	

How many minutes in __ hours?

Minutes	Hours
60	
120	
	3
240	
	5

How many days in __ weeks?

Days	Weeks
	1
14	
	3
28	
	5

How Many? Recording Sheet

Name: _____ Date: _____

How many minutes in __ hours?

Minutes	Hours
60	
120	
	3
240	
	5

How many days in __ weeks?

Days	Weeks
	1
14	
	3
28	
	5

How many hours in __ days?

Hours	Days
	1
48	
	3
	4
120	

How many months in __ years?

Months	Years
12	
	2
36	
	4
	5

Write four sentences summarizing what you needed to know to complete the task cards.

1. _____
2. _____
3. _____
4. _____



January Calendar

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				START	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31	END					

Game Cards for the Calendar Game

A

How many days are in a week?

B

What is the date of the 2nd Sunday of the month?

C

How many days are in 3 weeks?

D

How many hours are in a day?

E

How many months are in a year?

F

What is the date of the 4th Saturday of the month?

G

What will be the date 1 week from January 12th?

H

How many Tuesdays are in the month?

I

What is the date of the 1st Wednesday of the month?

J

What is the date of the 2nd Monday of the month?

K

Are there more Mondays or Wednesdays in the month?

L

How many hours are in 3 days?

M

How many days are in a year?

N

What is the date of the 2nd Tuesday of the month?

O

How many minutes are in 2 hours?

P

What is the date of the 2nd Wednesday of the month?

Q

What was the date 1 week ago? Hint: Go “back in time.”

R

What is the date of the 1st Thursday of the month?

S

How many days are in this month?

T

What is the date of the 3rd Thursday of the month?

U

What is the date of the 1st Saturday of the month?

V

What is the date of the 4th Saturday of the month?

W

What was the date 2 days before January 25th?

X

What is the date of the 3rd Tuesday of the month?

Y

What was the date 1 week before January 13th?

Z

What was the day before yesterday?

AA

How many Saturdays are in this month?

BB

What was the date yesterday?

CC

What will be the date tomorrow?

DD

What will be the date 2 weeks from January 11th?

EE

What day of the week will it be in 3 days?

FF

How many days are in 4 weeks?

GG

What was the date 1 week before January 11th?