**Measurement: Calendar Math (2-3 days)**

Donna Hancock 2014-2015

**Math SOL 3.12 Objective**: The student will identify equivalent periods of time, including relationships among days, months, and years, as well as minutes and hours.

**Essential Understandings:** All students should understand the relationship that exists among periods of time, using calendars and clocks.

**Essential Knowledge & Skills:** The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to identify equivalent relationships observed in a calendar, including the number of days in a given month, the number of days in a week, the number of days in a year, and the number of months in a year. They will identify the number of minutes in an hour and the number of hours in a day.

**Materials**:

* Equivalent Times Matching Cards (set per team)
* How Many? Task Cards (set per team)
* How Many? Recording Sheet
* January Calendar
* Game Cards for the Calendar Game

### Book:

### [A Second, a Minute, a Week with Days in It: A Book about Time (Math Is Categorical)](http://www.amazon.com/Second-Minute-Week-Days-Categorical/dp/0822578832/ref=sr_1_11?s=books&ie=UTF8&qid=1404249565&sr=1-11&keywords=calendar+math) by [Brian P. Cleary](http://www.amazon.com/Brian-P.-Cleary/e/B000APG194/ref=sr_ntt_srch_lnk_11?qid=1404249565&sr=1-11)

### Movie: Brainpopjr. - Calendar and Dates

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

**Instructional Activities: Calendar Math (Session 1) (1 hr. 10 mins.)**

1. Review calendar reading learned in previous grades and review numbers:

# days in a week – 7 days in a week

# days in a month – 30/31 days in a month, except Feb. 28

# days in a year – 364 ¼ days in a year

# months of the year – 12 months in a year

# minutes in an hour – 60 mins. in one hour

# hours in a day - 24 hours in one day

### Read [A Second, a Minute, a Week with Days in It: A Book about Time (Math Is Categorical)](http://www.amazon.com/Second-Minute-Week-Days-Categorical/dp/0822578832/ref=sr_1_11?s=books&ie=UTF8&qid=1404249565&sr=1-11&keywords=calendar+math) by [Brian P. Cleary](http://www.amazon.com/Brian-P.-Cleary/e/B000APG194/ref=sr_ntt_srch_lnk_11?qid=1404249565&sr=1-11).

### Help recall with having the students repeat information three times. Give skeleton notes. Pairs Check with a Switch.

1. Think, Square, Share - 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. (Remind students about accountable talk.)
2. Watch Brainpopjr. Calendar and Dates.
3. 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. (Think, Pair, Square, Share)

**Guided Math Block: Calendar Math (Session 2) (1 hr. 10 mins.)**

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| --- | --- | --- | --- |
| 10 mins. | *Warm Up* |  |  |
|  | **Little Support**  **(high)** | **Some Support (med.)** | **Lots of Support (low)** |
| 15 mins. | Meet with teacher to  monitor progress on  extension activity | Math games | Math games |
| 15 mins. | Work on extension  activity | Activity to practice skills | Meet with teacher for  re-teaching |
| 15 mins. | Math games | Meet with teacher to answer questions about activity | Activity to practice skills learned in lessons |
| 5 mins. | *Closure Activity* |  |  |

Math game: Play the Calendar Game. Students may work in pairs. Each pair will need a copy of the game board (January Calendar), one set of the 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 partner, 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.

Math journal: Construct a calendar for your birthday month. Mark your birthday on the calendar. Use the calendar to write about the events surrounding your birthday.

Exit Ticket: (1) Which is the longer time, 2 hours or 110 minutes? How do you know?

(2) If you are out of school for 2 weeks, how many days do you miss school? How do you know?

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Calendar Math Skeleton Notes

1. There are \_\_\_\_\_\_\_ days in a w\_\_\_\_\_\_\_.
2. There are \_\_\_\_\_\_ or \_\_\_\_\_\_\_ days in a m\_\_\_\_\_\_\_\_, except in F\_\_\_\_\_\_\_\_\_\_\_\_\_ where there are 28 days.
3. In one y\_\_\_\_\_\_\_\_\_, there are \_\_\_\_\_\_\_\_\_\_ d\_\_\_\_\_\_.
4. There are \_\_\_\_\_\_\_\_\_\_ m\_\_\_\_\_\_\_\_\_ in two years.
5. In one h\_\_\_\_\_\_\_\_\_\_, there are \_\_\_\_\_\_\_\_\_ m\_\_\_\_\_\_\_\_\_.
6. T\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ h\_\_\_\_\_\_\_\_ are in one d\_\_\_\_\_\_\_\_.

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Exit Ticket

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?