TEACHER PAGE

IT'S ABOUT TIME!

Objective
Upon completion of this activity, students will be able to:

- manipulate and convert units of time

Instructional Time
45 minutes

Materials
"It's About Time" Student Worksheet
Pencils

Procedure

1. Time is such a complicated subject, it should probably be a part of the curriculum as a subject of its own - time zones, different calendars, historical changes, AD and BC and the 24-hour day, etc. You may want to begin this lesson by asking students what they know about time. Have fun!
2. Distribute the activity sheet and read the first paragraph and the word list together, clarifying as needed.
3. Before going on to the problems, make sure that the students are with you in their comprehension. Ask a couple of basic questions about minutes and weeks.
4. This is a good lesson to teach how to read a math problem. Even good students in math probably do not realize that they read and reread a problem. Have everyone read the problem once; this first reading really just warms the brain up to the problem. Everyone should read the problem a second time and this time try to decide how to figure out the problem. After reading the problem a third time, students should decide if their approach makes sense, based on the information given. They can then continue on to figure out the problem.
5. Using the method above, tackle the first problem as a class. Discuss the methods used to figure the answer.
6. As a class, work each problem as above. These problems are so varied and require such flexible thinking that students might get unnecessarily frustrated on their own.

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Many words in our language are used to measure time. Some are familiar and some are strange. Read over the words and definitions – and then you will be transported in time to some unusual problems about time! Write your answers in complete sentences on another piece of paper. Go now – hurry, before someone sees you!

Second: a short time, 1/60th of a minute
Minute: a unit of time equal to 60 seconds
Hour: a unit of time equal to 60 minutes
Day: one period from sunrise to sunrise, or sunset to sunset, or midnight to midnight, equal to 24 hours
Week: 7 days
Fortnight: 2 weeks
Score: a set of twenty
Month: an irregular unit of time; there are 12 months in a year, months were originally based on full moon to full moon. Now some have 28 days and others have 31.
Year: a unit of time based on the Earth's orbit of the sun; it equals 365 ¼ days, 52 weeks, or 12 months
Decade: 10 years
Century: 100 years
Millennium: 1000 years
Era: a period of time measured from some important event
Eon: an extremely long period of time, many thousands of years; greater than an era.
Annually: every year
Monthly: every month

Now, ready for some time travel?

1. Let's go back to November 13, 1863. We are in Pennsylvania to hear a speech by the President. Do you know which president? Well, never mind. We are here to check his math. He starts his speech by saying "Four score and seven years ago our fathers brought forth on this continent a new nation…" He is probably referring to 1776 when the Declaration of Independence was signed. Was his math right? Was it four score and seven years after the Declaration? Check it out.
   PRESIDENT LINCOLN. FOUR SCORE IS 80 YEARS, 1776 PLUS 87 DOES EQUAL 1863.

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2. Let's now go to the year 1961. The President, a different one, is stating that he wants to land a man on the Moon "before this decade is out". Let us now fast forward to 1969 when Neil Armstrong stepped out onto the surface of the moon. Did he make the President's deadline? Which President was it?
   UNDER PRESIDENT KENNEDY, IT TOOK LESS THAN TEN YEARS. THEY MADE IT.

3. If we travel back to see the creation of the Marshall Space Flight Center in 1960, how many scores of years will we need to travel back?
   IT WILL TAKE TWO SCORES.

4. Talking about centuries, here's a concept for you. The first century was the years 1 – 100. The second century was the years 101 – 200. The thirteenth century was the years 1201 – 1300. The twentieth century was the years 1901 – 2000. In 1892, Percival Lovell announced that Martians had built canals on their planet. What century was this?
   THIS WAS THE NINETEENTH CENTURY.

5. Let's travel forward one century after the 1996 landing of the Pathfinder to see how it is being celebrated. What year will it be? Shall we go to Earth or Mars?
   IT WILL BE THE YEAR 2096. GO TO WHICHEVER PLANET YOU CHOOSE.

6. The Viking lander/orbiter missions landed on Mars in 1976. The Pathfinder lander/surface rover was launched toward the red planet in December 1996. How many decades later was the second lander mission launched.
   THIS IS TWO DECADES LATER.

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7. Let's travel forward to the fourth decade of the third millennium. What year is it?
   THIS IS TRICKY, IT WIL BE THE YEAR 2040.

8. If you wanted to travel back in time four centuries you could meet Galileo! What year would it be?
   IT WILL BE THE YEAR 1600.

9. How many weeks are in a decade? In a century?
   THERE ARE 52 WEEKS IN ONE YEAR—HENCE 520 WEEKS IN A DECADE, AND 5200 WEEKS IN A CENTURY.

10. Let's move forward in time one fortnight. What will the date be? Where will you be?
    ANSWERS WILL VARY.

11. The Mars Global Surveyor has been in a Martian orbit, mapping the surface of Mars, since March 1998. In June of 2000, scientists announced that the pictures taken by the Mars Global Surveyor suggest that there may be water near the surface. How many months had the surveyor been taking pictures of the red planet before scientists made that announcement?
    IF YOU DO NOT COUNT JUNE, IT IS 26 MONTHS.

12. Now for a tough question: how many days had the Surveyor been taking pictures if it started taking pictures on March 1, 1998–and the announcement was made June 22, 2000?
    INCLUDING THE LEAP DAY—BUNT NOT COUNTING JUNE 22—IT TOTALS 813 DAYS.

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13. Pathfinder landed at 4:56:55 (you read this as "4 hours, 56 minutes and 55 seconds") Universal Time (UT) on July 4, 1997. The air bags inflated in 10 seconds before landing – so what time was that? Then it rolled for two minutes and 30 seconds. SO: to what time would we need to travel if we wanted to see the Pathfinder right after it stopped?
    THE AIR BAGS INFLATED AT 4:56:45. IT STOPPED ROLLING AT 4:59:25.

14. We want to travel forward to the celebration of 9 decades of your life, the birthday party. What would the date be? How many months would you have lived? What great historical event might you have seen?
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