

Where Has the Time Gone?

Elapsed Time

K20 Center, Alexandra Parsons
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Grade Level	3rd Grade	**Time Frame**	1-2 class period(s)
Subject	Mathematics	**Duration**	90 minutes

Essential Question

What are ways in which we can observe our world?

Summary

In this lesson, students investigate how to determine how much time has passed (by five-minute intervals). Prerequisites for this lesson are knowledge that time passes, that a clock measures time, and how to read a clock by five-minute intervals. Skip counting by fives is also needed for this lesson.

Snapshot

Engage

Students will activate prior knowledge of number lines and clocks.

Explore

Students will use a number line or clock to figure out situations using time.

Explain

Students will walk through how to solve elapsed time problems.

Extend

Students will figure out how much time is spent learning during the day.

Evaluate

Students will create an elapsed time problem.

Standards

Oklahoma Academic Standards for Mathematics (Grade 3)

3.GM.3.1: Read and write time to the nearest 5-minute (analog and digital).
3.GM.3.2: Determine the solutions to problems involving addition and subtraction of time in intervals of 5 minutes, up to one hour, using pictorial models, number line diagrams, or other tools.

Attachments

- Elapsed Time Word Problems.docx
- Elapsed Time Word Problems.pdf

Materials

- Number lines that include numbers 0-60, counting by fives (one for each student plus a larger version for the teacher)
- Student gear clocks (one for each student and one large Judy clock for the teacher)
- Elapsed Time Word Problems half page (one per student)
- Class schedule (one small copy for each student)

Engage

Pass out a counting by fives number line to each student. If you have a class set of student gear clocks, pass those out to each student as well.

Ask students to Tell Me Everything about what the number line would be used for and what the clocks would be used for. For time's sake, you can allow this activity to be a whole group brainstorm.

Where To Go

There are many answers that can be correct beyond the context of elapsed time. Be positive for every correct answer, no matter how far from today's topic an answer is.

Explore

Hand out a copy of the Elapsed Time Word Problems to each student.

Interactive Notebooks?

I, personally, am an advocate for interactive notebooks. At minimum, they make organization much easier and decrease occurrences of the "I lost that" conversation. At maximum, they allow students to take charge of their learning and review what they've learned (which is a skill we need to teach).

Start by reading the problems aloud or having students read the problems to themselves.

Ask students, "How can you use your clock to answer the first question?" Give them time (independently or in pairs) to think about it and try it out on their own.

Helping Out

If this is the first time your students have done an 'explore' activity, the process will probably have low or moderate success. That's okay, because critical thinking is a skill to develop and is not innate. If you need to help students sort out their thinking after you've given them time to consider the first problem, you will help prepare them to think through the other two problems. It's up to you to stair-step students away from a focus on you and toward a focus on learning.

Ask students "How can you use the number line or the clock to answer the questions?" Allow them time to think through the question and try to answer it on their own.

Explain

After enough students have shared, grab your big teacher Judy clock.

Judy Clocks

If you don't have a Judy clock, you're missing out! What I like about this clock is that as you move the minute hand the hour hand moves as well! If you don't have the funds for a Judy clock, you can use your large classroom clock, it'll just be clunkier. You can find Judy clocks available for purchase online.

Reread the first problem. Ask your students what time to start with on the clock. Once they answer, move your clock to 1:20. Ask students what time the problem ends. Put a sticky note or some other kind of marker at 2:00. Walk the students through how to use the clock to skip count by fives until the clock reads 2:00. When that's done, have the students write down the correct answer if they haven't already.

Get out a large number line marked by 5's. (For ease of concreteness, it should stop at 60.) Tell students that they can use the number line to solve the problem, too! Start at 20 on the number line and skip count by fives until you get to 60.

Reminders

You might need to take a moment now to remind students that on a clock 60 and 00 are the same thing.

Reread the second problem. Go through the steps of modeling the problem on the clock just like you did with the first problem. Then, model the problem using the number line as before.

Clock Versus Number Line

In theory, a clock is a number line wrapped into a circle. For the second problem, you'll start on the number line at the 30, go to 60, and then start again at 0 to end at 45. This process might seem complicated, but that's technically what we're doing with a clock.

Repeat with the third problem as you've already done.

Extend

Distribute a personal classroom schedule to each student.

Saving Paper

If you don't want to spend the paper on a schedule for each student, you can post one big schedule for everyone to see. However, one advantage of individual schedules is that you can ask students to tape them to their desks and then refer back to them throughout the year and lay the foundation of personal responsibility versus the teacher being responsible for everything.

Allowing for whichever method feels best for each student (number line, clock, etc.), ask students to determine how much time elapses for each part of their day.

Helping Hand

If your students need help getting started, you can work through the first part of the schedule as a group. However, stop there and let them think through the rest of the schedule. Wander around and help individuals as needed.

Evaluate

In their interactive notebooks, or on a piece of paper, have students Create the Problem. Ask them to think about things that they do in their life and write a problem similar to the problems they've worked on. When they're done have them switch with a partner and try to solve the problem using whichever method they prefer.

Resources

- K20 Center (n.d.). Create the problem. Strategies. Retrieved from https://learn.k20center.ou.edu/strategy/d9908066f654727934df7bf4f506ae04
- K20 Center (n.d.) Tell me everything. Strategies. Retrieved from https://learn.k20center.ou.edu/strategy/baee4e90c5fa1a7060ca04dd8b001ea4