

## How many movies can you see in one day?

### The Situation

With plenty of days off from school coming up you plan to spend an entire day at the movie theater. You want to see as many movies as possible on that one day.

### The Challenge(s)

Create a schedule that shows the most movies you could see in one day.

### Question(s) To Ask

These questions may be useful in helping students down the problem-solving path:

What is a guess for the number of movies you could see in one day that is too low?

What is a guess for the number of movies you could see in one day that is too high?

What information would be useful in figuring this out?

How can you tell when a movie would end?

What happens in a movie theater before/after a movie plays?

### Consider This

Smaller movie theaters with fewer theaters tend to set up their movies so that they all start at about the same time. For example, using Option 1 you will notice that all movies start around 1 PM but end around 3:30 PM. Then the next set of movies all begin at around 4 PM. As such, if you pick Option 1 as your theater, students should come up with different schedules to see four movies.

This is a great opportunity to have students demonstrate Math Practice 3 – Construct viable arguments and critique the reasoning of others. Students will not likely realize that all answers will be four, and they can explain how they came up with their schedules.

If you want to ensure a variety of answers, then I recommend Option 2. It is from a large theater and there are movies starting every hour.

You may have to modify the situation slightly to take into account that third and fourth graders cannot see a PG-13 or R rated movie.

Also, I don't have a problem with students bending the rules of the scenario slightly as long as they can justify themselves. For example, they could reason that the first 10 minutes after a movie's show time are just previews so they could come in late and still see the complete movie.

You can find other examples of theater schedules on websites such as [Yahoo movies](#), [Moviefone](#), and [Fandango](#).

### Extension

Students could create a school/activity schedule similar to these movie theater schedules. They could plan their subjects and/or activities, their start time, and durations. How much could be done in one day?

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