

## Teacher's Guide for Fantastic Factorials

Thank you for choosing this lesson for your students. The goal of this one-class learning exercise is to show students that their everyday life events have so much to do with factorials - even though they do not realize this!. The goals of this lesson include: to introduce the concept of factorials; to implement cooperative learning in class; and to learn by doing role-playing. In this video, students will see how the concept of factorials can be used in our daily lives. This video is about one family on vacation. During the journey, you can see a few examples of factorials. For the activities, students will be sitting in a group of 6. Then teacher will distribute blank paper/colour paper/cardboard labelled with Adam, Noah and Bakar. Blank paper/colour paper/cardboard labelled with number 2,4,6,8 for activity 2. Then for activity 3, the teacher will distribute blank paper/colour paper/cardboard labelled with Mom, Dad, Adam, Bakar and Noah. In activity 4, the teacher should invite students to the front of the class. In this activity students will learn about proof by induction. The teacher has to guide the students to explore new ideas during their group activities. Hopefully students will enjoy learning and construct new knowledge.

### 2. Prerequisites.

Students are able to apply the multiplication rule of counting.

### 3. Class exercises.

The students are asked to carry out the cooperative learning in groups of 6. These activities require students to arrange cards to show different arrangements that can be made.

### 4. Materials needed.

Materials needed for these activities are very simple. We only need to provide a few pieces of blank paper or colored paper. For each student, provide a colour paper labeled "Mom", "Dad", "Adam", "Bakar" and "Noah", 2, 4, 6 and 8

I hope you have enjoyed this lesson. Thank you for your participation.