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Discrete

Standard

Use mathematical models to represent and understand quantitative relationships

-model problem situations with objects and use representations such as graphs, tables, and equations to draw conclusions.

Launch

The circus is in town and those silly clowns need help getting ready! Are you ready to help the clowns with their costumes? Today we are going to help eight different clowns put on their makeup and hats.

Explore

On the activity worksheet there will be eight clowns. Each clown needs a mouth. Draw either a smile or frown for each one. Each clown needs a colored hat: red, green, yellow, or blue. How many different clowns can we create? (No two should be the same.)

On your worksheet write down how many clowns you think you will use. Write that under predictions.

Apply

After predictions are made students will start to come up with combinations. Students will use the clown activity sheet to help them figure out the number of combinations.

Have a student from each row come up and show a clown, each clown shown should be different. Students will put a check mark next to each clown if they have it on their worksheet.

What if six colors could be used for hats? How many combinations would there be now.

Summarize

Students will compare their predictions to the actual number. Were you correct or off? Discuss how students came up with their answers. How could we figure out this problem if the clowns were not in front of us?

http://illuminations.nctm.org/lessons/combinations/Combinations-AS-Clowns.pdf

Lesson plan: http://illuminations.nctm.org/LessonDetail.aspx?ID=L614