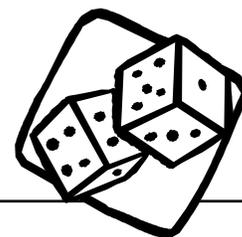


# Pom-Pom Probability



**Guess how many pom-poms you toss will land inside a circle.**

## What you need

Pom-poms, various sizes

Yarn to make circles

Paper and pencil

## What to do

1. Cut a piece of yarn 9 feet long. Tie the ends together and place the yarn circle on the floor.
2. Lay a 1 foot long strip of yarn about 3 feet from the edge of the circle.
3. Choose 10 pom-poms.
4. Predict how many of the pom-poms you think will land inside the circle.
5. Toss all ten of the pom poms at the same time.
6. In order to be counted inside the circle, they must be inside the circle after they finish moving.
7. Gather the pom-poms and predict again.
8. Toss them again.
9. Cut a piece of yarn 6 feet long and make a new circle.
10. Predict how many will fall in the circle before each toss.

## What to ask

- How many are inside?
- How many are outside?
- How close were you to your prediction?
- What are the most pom-poms that can fall inside the circle? The least?
- Do you predict more or less for the smaller circle than the bigger circle?
- How is the number of pom poms that fall inside the circle related to the size of the circle?
- How did you decide what to do when the pom pom was partly inside and outside the circle?
- What would happen to your prediction if you increased the number of pom-poms to 20?



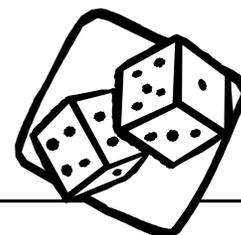
## Did you know?

Playing games like Pom-Pom Probability is a fun way to think and learn about probability. For example, you may not get the same results for every toss at the same circle. There are many factors involved in determining probability.



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## What's next?

- Create your own size circle. Is it bigger or smaller than the ones you were using? How do you adjust your prediction for it?
- Place the smaller circle inside the larger one. How does this change your predictions for how many will fall into each circle?
- Throw the pom poms one at a time. Does this change your prediction?
- Change how far away you stand before throwing the pom-poms. How do you change your prediction when you are further away? When you are closer?

## To learn more

### More Than One

by Miriam Schlein

The book explains the concept of sets and provokes questions. The readers learn that one week can be seven days, one dozen is twelve and one forest can be a variable number of trees.

## How it helps with school

### Texas PreKindergarten Curriculum Guidelines

Number and Operations, Patterns

### Texas Essential Knowledge and Skills (TEKS) Standards

Number, Operation and Quantitative Reasoning: K.1A-C, K.4; 1.3A-B; 2.3A

Patterns, Relationships, and Algebraic Thinking: K.5; 1.4A; 2.6C

Probability and Statistics: 1.10B; 2.11C

Underlying Processes and Mathematical Tools: K.14A-B, K.15; 1.12A-B, 1.13; 2.13A-B, 2.14

### National Council of Teachers of Mathematics (NCTM) Standards

Data Analysis and Probability, Algebra, Number and Operations, Reasoning and Proof, Connections, Communication

*Activity inspired by: Investigations in Data, Number and Space for first grade by TERC (2001-2002)*