## Binomial Experiments
**ID: 9999**

Name _____

Class _____

*In this activity, you will explore:*

- *Probability of independent events*
- *Combinations*
- *Binomial experiments*

Open the file *StatAct13_BinomExp_EN.tns* on your handheld and follow along with your teacher to work through the activity. Use this document as a reference and to record your answers.

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**BINOMIAL EXPERIMENTS**

Statistics

Probability, Independent Events, and Combinations
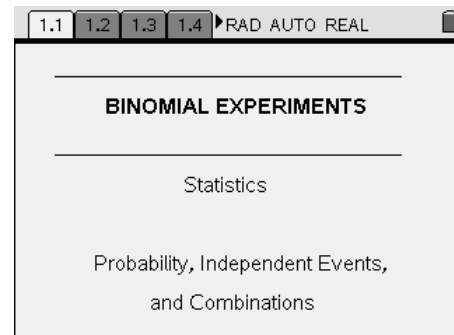
### Problem 1 – The First Success

- Write a general rule for finding the probability of getting the first success on the *n*th trial.

- Explain why the formula works.

- According the 2000 US Census, 24.4% of Americans have at least a bachelor's degree. When randomly calling Americans for a survey, find the probability that it takes 10 calls before you reach someone with a bachelor's degree.

### Problem 2 – The Binomial Probability Formula

- Write a general rule for finding the probability of *x* successes in *n* trials.

- Explain why the formula works.

About 10% of people are left-handed. A teacher has 25 students and one left-handed desk.

- What is the probability that the teacher has exactly one left-handed student?

- What is the probability that the teacher has one or two left-handed students?

- What are the requirements for a binomial experiment?

**Problem 3 – Extension**

Use the Binomial Pdf command to answer the following.

- For a given airline flight, the probability that a customer shows up for a flight is 92%. Out of 20 booked seats, find the probability that four customers do not show up.

- Find the probability that either one or two customers do not show up.